Consortium on Trade Research, Agriculture, Trade, and Development: A Comparative Look at U.S., Canadian, and European Community Policies

CONSORTIUM ON TRADE RESEARCH, AGRICULTURE, TRADE, AND DEVELOPMENT: A COMPARATIVE LOOK AT U.S., CANADIAN, AND EUROPEAN COMMUNITY POLICIES. T. Kelley White and Charles E. Hanrahan, eds. International Economics Division, Economic Research Service, U.S. Department of Agriculture, Washington, D.C. 20005-4788. January 1986. ERS Staff Report No. AGES850208.

ABSTRACT

This report contains edited versions of papers and discussions presented at the sixth meeting of the Trade Research Consortium at Airlie House, Virginia, December 16-18, 1982. This meeting of the Trade Research Consortium was focused on a comparison of the domestic and trade policies of the United States, Canada, and the European Economic Community (EEC), and the effects of these policies on world markets, world price stability, and the interaction between these developed market economies and the Third World. A paper was presented for each of the three countries or regions on each of three topics: (1) Government Policy in Support of Domestic Agriculture: Cost and Benefits; (2) Trade Policy, Commercial Marekt Relationships, and Effects on World Price Stability; and (3) Relations with the Third World: Views on the North-South Dialogue and Food Security. The set of papers provides an illuminating view of the differences and similarities among the United States, Canada, and the European Economic Community in the treatment of their domestic agricultural sectors and the interface between the agricultural sector of each country and commercial world markets as well as the Third World countries.

Keywords: United States, Canada, European Economic Community, Agricultural Trade, North-South Dialogue, Food Security Agricultural Policy, Trade Policy, World Price Stability.

PREFACE

This report contains edited versions of papers and discussions presented at the sixth meeting of the Trade Research Consortium at Airlie House, Virginia, December 16-18, 1982. Co-chairmen and organizers of this meeting of the Consortium were T. Kelley White, Economic Research Service, U.S. Department of Agriculture, and Tim Josling, Stanford University.

The setting for this conference in late 1982 was a period of rapid and significant change in world agricultural trade, world economic conditions and intensifying competition among major agricultural exporting countries. The rapid growth in world agricultural trade and U.S. agricultural exports of the seventies had been followed by a series of changes in world and U.S. economic conditions which were beginning to dampen world demand for agricultural imports and negatively affect the U.S. competitive position in world agricultural markets. These changes included: growing world economic recession, rapidly rising real interest rates, increasingly serious debt problems of many low- and middle-income countries, and the increasing value of the dollar relative to the other major currencies in the world.

The sixth meeting of the Trade Research Consortium was focused on a comparison of the domestic and trade policies of the United States, Canada, and the European Economic Community (EEC), and the effects of these policies on world markets, world price stability, and the interaction between these developed market economies and the Third World. The program was divided into three components:

1. Government Policy in Support of Domestic Agriculture: Costs and Benefits;

2. Trade Policy, Commercial Market Relationships, and Effects on World Price Stability; and

3. Relations with the Third World: Views on the North-South Dialogue and Food Security.

For each of these topics, a paper was presented for each of the three countries or regions. Authors preparing papers were provided a suggested outline in an effort to make coverage for each country for each topic as comparable as possible. While authors took somewhat different approaches in dealing with their topic, the set of papers provides an illuminating view of the differences and similarities among the United States, Canada, and the European Economic Community in the treatment of their domestic agricultural sectors and the interface between the agricultural sector of each country and commercial world markets as well as the Third World countries. There have been significant developments in world agricultural trade since this conference was held but changes in domestic agricultural and trade policies of the subject countries have so far been relatively minimal so that the papers are surprisingly timely in today's setting and are helpful in understanding today's agricultural and trade policy debate.

The original papers presented at the Trade Research Consortium meeting were edited by Charles Hanrahan, formerly of ERS and currently with the Congressional Research Service, and T. Kelley White, Economic Research Service. With the exception of the paper by Paul Dymock on Relations with the Third World: Views on the North-South Dialogue in Food Security - The European Community, which was shortened significantly for inclusion in this manuscript, editing of the papers was minimal and every effort was made to retain the views originally expressed by the authors.

FOREWORD

During the seventies, world agricultural trade grew rapidly and there were major changes in the pattern and structure of world agricultural trade, as well as U.S. interest in world agricultural markets. These changes posed new challenges for U.S. agriculture. The Economic Research Service (ERS) has a major role to play, especially in research and country analysis, in meeting these challenges. In doing so, it must work closely with other agencies in USDA, with researchers in U.S. universities, and with researchers in universities and government research institutions in other countries.

The goal of increased interaction between ERS and U.S. university researchers was formalized in June 1980 by establishing the Consortium on Trade Research. USDA's Foreign Agricultural Service (FAS) joined the Consortium in 1982. Subsequently, membership in the Consortium has expanded to include Agriculture Canada, researchers from several Canadian universities, and researchers from Germany and France. The objectives of the Consortium are to:

- Foster sustained efforts in international agricultural trade research.
- Encourage and facilitate interaction between ERS, FAS, and U.S. university and foreign trade policy researchers.
- Provide a forum for the exchange of research results in the identification of problems and policy issues requiring research.

The Consortium is a cooperative undertaking between ERS, FAS, various U.S. universities, Agriculture Canada, and Canadian universities. Membership in the Consortium is subject to approval by the Consortium's Executive Committee but is generally open to those who have an active participation in international agricultural trade research and analysis or its policy applications.

CONTENTS

GOVERNMENT POLICY IN SUPPORT OF DOMESTIC AGRICULTURE: COSTS AND BENEFITS

The United States

Kenneth C. Clayton, R. Thomas Fulton, and John E. Lee, Jr.

Federal budget outlays for agricultural programs in the United States encompass not only traditional direct allocations to producers, but also include a number of programs which have a more indirect effect on producers. Economists and others have devoted considerable attention toward measuring the impact of direct budget outlays, such as commodity support programs, on farm income stabilization. Yet few studies incorporate the full range of program expenditures, such as school lunch and food stamps, which indirectly increase demand for food stuffs, thereby raising total farm income.

As Cochrane and Ryan have observed:

> Although it is widely agreed, and has long been held, that the fundamental goal of farm policy is to maintain a prosperous, productive farm sector with a family-farm type of organization, differences arise--important differences--with regard to the means for achieving that broad policy goal. Should equitable farm incomes and family-farm structure be obtained solely through the marketplace or through direct government assistance, or by some combination of the two? [1, p. 21]

The policy response has varied considerably over the years in response to the economic situation in agriculture as well as prevailing political and social attitudes.

It is our purpose to trace the development of Federal agricultural programs and their associated budget outlays in the post-World War II period (1950-82). We begin with a brief chronological discussion of the economic and policy setting within which these outlays have been made. The following is an analysis of U.S. agricultural program outlay data along with perspectives on the meaning and limitations of those data.

Economic and Policy Setting

Although examples of Government intervention in agriculture can be traced to the colonial period, programs implemented as a result of the Great Depression and the advent of World War II characterize much of agricultural policy as it exists today.

Federal budget outlays for agricultural programs mirror the economic situation faced by farmers, particularly for those programs providing direct benefits. Policy has occasionally anticipated farmers' needs and more often responded once those needs have been expressed. On this basis, it is useful to view the post-World War II era in three component periods: from 1950 to 1964 when high price supports and tremendous technological innovation prevailed, from passage of the Food and Agriculture Act of 1965 to 1972, and from passage of the Agriculture and Consumer Protection Act of 1973 to 1982. Each of these periods is reasonably well characterized by a unique set of economic circumstances and a definable policy response.

The 1950-64 Period: With guaranteed, high price supports, U.S. agriculture emerged from World War II operating at full capacity as a result of increased war demand. These high price supports enacted during and immediately following the war years continued well into the fifties.

The fifties were characterized by rapid advances in technological innovation that encouraged agricultural production. Productivity increased from an index value of 100 in 1950 to 128 in 1960. At the same time, exports suffered, due at least in part to high domestic price supports that tended to make U.S. farm products less competitive in world markets.

An early policy response to our agricultural export imbalance was the enactment of the Agricultural Trade Development and Assistance Act (PL-480) in 1954 in an effort to stimulate world demand for surplus U.S. farm products. As these crop surpluses grew after World War II, the United States responded to worldwide food needs and aided foreign economic development, while also reducing burdensome domestic stocks. PL-480 grew to include approximately a quarter of all agricultural program outlays through the late sixties (see table 1 and fig. 1). Expenditures for PL-480 were sometimes half or more as large as outlays for farm income stabilization and price support through 1967. Crediting the entire PL-480 outlay as a transfer to U.S. farmers, of course, depends upon the international welfare benefits of the program. However, Cochrane and Ryan [1, p. 301] suggest that not more than half of the PL-480 outlay should be considered a benefit to U.S. farmers.

There was an attempt during the fifties to reduce or make more flexible prevailing price supports. Market prices for grains held at a relatively high level by Federal loan rates, caused exports to be less than competitive. Although efforts to reduce loan rates were modestly successful, rapid gains in productivity outweighed reduced incentives to produce under the programs. Government stocks escalated as did their associated carrying costs (table 1).

In an effort to reduce crop acreage in production and conserve fragile soil, a Soil Bank Program was begun in 1956. It provided for both an annual land rental and a long-term land retirement arrangement. Outlays for this program quickly rose to the $700-$800 million level in 1958 and 1959, then declined slowly through the sixties as the program received less emphasis (table 1).

A brief unsuccessful attempt was made to impose mandatory production controls in 1961. This was followed by a movement toward more voluntary programs with the possibility of payments for idled acreage. Of greater significance, however, was the lowering of price supports to world market levels with the difference between the old support level and the new being made up to farmers through a direct payment. As a result markets were given a chance to clear, thereby reducing the likelihood of the Government accumulating stocks.

Income pressures were felt most acutely by many inefficient small and medium-sized farms. Farm numbers in this period declined by well over half. Resources, however, tended to stay in agriculture, as the larger, more efficient producers acquired the assets, particularly land, of outgoing farmers.

Table 1--Net Federal budget outlays for agricultural related functions, fiscal years, 1950 to 1982

Function	Fiscal Year 1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
	Million dollars										
Agriculture and agricultural resources											
Farm income and price supports											
Price support and related programs	1,606	-781	-70	1,831	1,333	3,327	3,554	2,684	987	2,775	1,480
Federal crop insurance	7	4	7	5	11	12	10	--	--	--	--
International wheat agreement	76	180	5/	131	59	5/	92	5/	6/	48	66
Sugar act	60	69	60	63	66	70	65	5/	70	67	74
Wool act	--	--	--	--	--	--	2	5/	57	20	93
Transfer of commodities to stockpile	--	--	--	--	--	--	--	--	--	--	192
Removal of surplus agricultural commodities	96	46	38	82	178	59	179	171	125	141	90
Agricultural adjustment programs	--	21	10	13	41	40	39	121	--	--	--
Agriculture and emergency credit	--	--	--	--	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--	--	219	381	50
Subtotal	1,845	-461	45	2,125	1,688	3,508	3,941	2,976	1,458	3,432	2,045
Research and marketing services											
Research and extension	163	149	143	145	150	177	215	227	255	291	293
Consumer protection, marketing, regulation	3/	3/	3/	3/	3/	3/	3/	3/	3/	3/	3/
Other	--	--	--	--	--	--	--	--	--	--	--
Agricultural credit											
Financing farm ownership 1/	4/	185	92	-83	-74	56	43	-28	-3	5	-3
Financing farm operation	146	156	167	177	191	169	185	245	242	246	249
Rural electric and telephone 2/	294	276	244	239	217	204	217	267	297	315	330
Other	--	-1	13	16	139	10	3	10	--	--	--
Agricultural land and water conservation											
Conservation and use	275	284	274	251	183	212	222	249	233	246	237
SCS and watersheds	61	62	67	66	61	74	83	89	102	125	131
Conservation reserve	--	--	--	--	--	--	4	548	733	848	324
Other	--	--	--	--	--	--	--	--	--	--	--
Offsetting receipts	--	--	--	--	--	--	--	--	--	--	--

Footnotes located at end of table.

Continued

Table 1--Net Federal budget outlays for agricultural related functions, fiscal years, 1950 to 1982--Continued

Function	Fiscal Year										
	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
	Million dollars										
Total agriculture and resources	2,784	650	1,045	2,936	2,555	4,410	4,913	4,583	3,317	5,508	3,606
Other programs											
Natural resources management											
Land management	10	7	10	14	15	16	20	24	29	33	35
Forest resources	75	79	95	107	117	118	138	162	174	201	220
Water resources	298	295	249	231	199	163	163	171	226	246	209
Rural development											
Farm/rural housing	12	26	22	19	--	--	1	--	--	43	-25
Rural development	--	--	--	--	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--	--	--	--	--
Nutrition programs											
School lunch and other child nutrition programs	83	83	84	83	84	83	83	99	167	218	234
Food stamps	--	--	--	--	--	--	--	--	--	--	--
International commodity assistance	--	--	--	--	74	91	94	187	1,219	1,135	1,339
Total other programs	478	490	460	454	489	471	499	643	1,815	1,876	2,012
Total all agricultural programs	3,262	1,140	1,505	3,390	3,044	4,881	5,412	5,226	5,132	7,384	5,618
Total Federal budget	40,156	44,633	66,145	73,982	67,772	64,570	66,540	69,433	71,936	80,697	76,539

Footnotes located at end of table.

Continued

Table 1--Net Federal budget outlays for agricultural related functions, fiscal years, 1950 to 1982--continued

Function	Fiscal Year 1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
	Million dollars										
Agriculture and agricultural resources											
Farm income and price supports											
Price support and related programs	1,331	2,051	2,857	3,175	2,646	1,345	1,652	3,167	4,114	3,777	2,822
Federal crop insurance	--	--	--	--	--	--	--	--	--	--	--
International wheat agreement	76	90	74	126	35	--	--	--	--	--	--
Sugar act	72	80	77	87	92	88	82	84	87	93	86
Wool act	61	65	63	73	23	38	35	72	68	56	75
Transfer of commodities to stockpile	201	1983	100	38	41	26	--	--	--	--	--
Removal of surplus agricultural commodities	203	201	112	250	273	118	145	175	415	450	402
Agricultural adjustment programs	--	--	--	--	--	--	--	--	--	--	--
Agriculture and emergency credit	--	--	--	--	--	--	--	--	8/-47	8/-87	8/18
Other	39	67	102	108	126	152	8/157	8/227	8/174	8/182	8/172
Subtotal	1,983	2,747	3,385	3,847	3,236	1,767	2,071	3,725	4,811	4,471	3,575
Research and marketing services											
Research and extension	324	341	391	414	457	503	8/570	8/618	8/437	8/489	8/543
Consumer protection, marketing, regulation	3/	3/	3/	3/	3/	3/	3/	3/	8/152	8/181	8/206
Other	--	--	--	--	--	--	--	--	8/56	8/60	8/65
Agricultural credit											
Financing farm ownership 1/	-3	-6	4	-9	-17	-7	-21	--	--	--	--
Financing farm operation	353	240	296	259	285	168	8/11	8/295	9/	--	--
Rural electric and telephone 2/	301	303	342	342	392	373	12	303	314	338	390
Other	--	--	--	--	--	--	--	--	--	--	--
Agricultural land and water conservation											
Conservation and use	251	260	219	213	213	208	216	209	294	180	167
SCS and watersheds	146	157	182	193	195	211	8/219	8/216	8/218	8/245	8/256
Conservation reserve	363	344	309	297	203	159	196	109	189	118	77
Other	--	0	3	3	24	30	26	28	8/32	8/34	8/41
Offsetting receipts	--	--	--	--	--	--	-37	-42	-85	-41	-42

Continued

Footnotes located at end of table.

Table 1--Net Federal budget outlays for agricultural related functions, fiscal years, 1950 to 1982--continued

Function	Fiscal Year										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
	Million dollars										
Total agriculture and resources	3,718	4,395	5,131	5,559	4,988	3,412	3,263	5,561	6,318	6,075	5,278
Other programs											
Natural resources management											
Land management	41	44	50	57	65	77	8/	8/151	8/170	8/199	8/188
Forest resources	262	281	303	332	374	406	8/482	8/487	8/473	8/556	8/649
Water resources	266	332	344	339	328	367	8/300	8/293	8/288	8/263	8/319
Rural development											
Farm/rural housing	--	--	--	--	--	--	--	--	13	132	-182
Rural development	--	--	--	--	--	--	--	--	28	25	26
Other	--	--	--	--	--	--	--	--	8/-37	8/84	8/94
Nutrition programs											
School lunch and other child nutrition programs	241	261	263	278	362	517	522	505	587	383	611
Food stamps	--	14	20	68	7/	7/	7/	7/	7/	577	1,568
International commodity assistance	1,654	1,726	2,040	1,704	1,641	1,784	1,452	1,204	975	937	918
Total other programs	2,464	2,658	3,020	2,778	2,770	3,151	2,843	2,640	2,497	3,156	4,191
Total all agricultural programs	6,182	7,053	8,151	8,337	7,758	6,563	6,106	8,201	8,815	9,231	9,469
Total Federal budget	81,515	87,787	92,642	97,684	96,507	106,978	10/158,254	178,833	184,548	196,588	211,425
Agriculture and agricultural resources											
Farm income and price supports											

Footnotes located at end of table.

Continued

Table 1--Net Federal budget outlays for agricultural related functions, fiscal years, 1950 to 1982--continued

Function	Fiscal Year										
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982 14/
	Million dollars										
Price support and related programs	3,983	3,555	1,004	575	1,014	3,809	5,623	3,572	2,717	4,036	15/11,651
Federal crop insurance	--	--	-2	30	15	91	57	-8	38	1	212
International wheat agreement	--	--	--	--	--	--	--	--	--	--	--
Sugar act	86	87	83	77	10	--	--	--	--	--	--
Wool act	117	74	8	19	45	5/	5/	5/	5/	5/	5/
Transfer of commodities to stockpile	--	--	--	--	--	--	--	--	--	--	--
Removal of surplus agricultural commodities	593	740	--	--	--	--	--	--	--	--	--
Agricultural adjustment programs	--	--	--	--	--	--	--	--	--	--	--
Agriculture and emergency credit	8/131	8/162	94	-133	296	393	653	1,017	478	-228	405
Other	8/170	8/170	8/225	8/176	155	191	254	269	226	184	81
Subtotal	5,080	4,788	1,412	744	1,535	4,484	6,587	4,850	3,459	3,993	12,349
Research and marketing services											
Research and extension	500	471	589	548	570	655	708	797	834	925	977
Consumer protection, marketing, regulation	297	380	216	240	256	287	257	294	332	369	414
Other	8/119	8/103	8/119	8/135	8/144	161	219	304	297	324	281
Agricultural credit											
Financing farm ownership 1/	--	--	--	--	--	--	--	--	--	--	--
Financing farm operation	--	--	--	--	--	--	--	--	--	--	--
Rural electric and telephone 2/	467	529	11/	11/	11/	11/	11/	11/	11/	11/	11/
Other	--	--	--	--	--	--	--	--	--	--	--
Agricultural land and water conservation											
Conservation and use	158	188	8/247	447	13/432	13/468	13/582	13/559	13/548	13/597	13/572
SCS and watersheds	8/281	8/274	12/	12/	12/	12/	12/	12/	12/	12/	12/
Conservation reserve	67	52	47	41	37	--	--	--	--	--	--
Other	8/40	8/19	--	--	--	--	--	--	--	--	--
Offsetting receipts	-230	-185	-53	-48	-41	-62	-39	-7	-161	-40	-80
Total agriculture and resources	6,879	6,619	2,477	2,107	2,933	5,993	8,314	6,797	5,309	6,168	14,512
Other programs											

Continued

Footnotes located at end of page

Table 1--Net Federal budget outlays for agricultural related functions, fiscal years, 1950 to 1982--continued

Function	Fiscal Year										
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982 14/
	Million dollars										
Natural resources management											
Land management	8/211	8/226	140	207	13/231	13/367	13/355	13/395	13/456	13/492	13/489
Forest resources	8/681	8/723	719	870	13/916	13/1,109	13/1,275	13/1,536	13/1,798	13/1,920	13/1,968
Water resources	8/360	8/447	8/412	8/2,098	8/730	8/976	8/884	8/983	8/1,048	8/1,038	8/1,093
Rural development											
Farm/rural housing	170	-227	1,296	-892	7	100	449	184	1,719	-129	1,095
Rural development	35	-181	315	4	313	465	13/516	13/669	13/798	13/839	13/1,066
Other	8/102	8/104	--	8	11	--	--	--	--	--	--
Nutrition programs											
School lunch and other child nutrition programs	716	693	1,588	2,044	2,327	3,129	3,427	3,965	4,898	4,949	15/3,359
Food stamps	1,909	2,208	2,845	4,599	5,632	5,539	5,499	6,822	9,117	11,253	15/11,331
International commodity assistance	993	754	639	936	691	850	808	976	1,073	1,254	1,141
Total other programs	5,177	4,747	7,954	9,874	10,858	12,535	13,213	15,530	19,834	21,616	21,542
Total all agricultural programs	12,056	11,366	10,431	11,981	13,791	18,528	19,800	22,327	23,293	25,609	33,891
Total Federal budget	231,021	247,074	269,620	326,151	366,418	402,710	450,804	490,997	476,675	657,204	725,531

NA=Not Available.

1/ Includes only the administrative and other actual Government cost of the Farm Credit Administration (FCA). FCA open market funds are not in the budget.

2/ Loan collections are not reflected since such funds revert directly to the U.S. Treasury.

3/ Included in "research and extension."

4/ Included in "financing farm operation."

5/ Included in "price support and related programs."

6/ Included in "other" under farm income stabilization.

7/ Included in "school lunch and other child nutrition programs."

8/ Included trust funds.

9/ "Financing farm operation" broken into two parts--"agriculture and emergency credit" and "regional development."

10/ Budget figures prior to 1967 were for an administrative budget which did not include trust funds. Budget figures starting in 1967 are for an unified budget which includes trust funds.

11/ Included in "rural development."

Figure 1

Agricultural Program Outlays, 1950-59

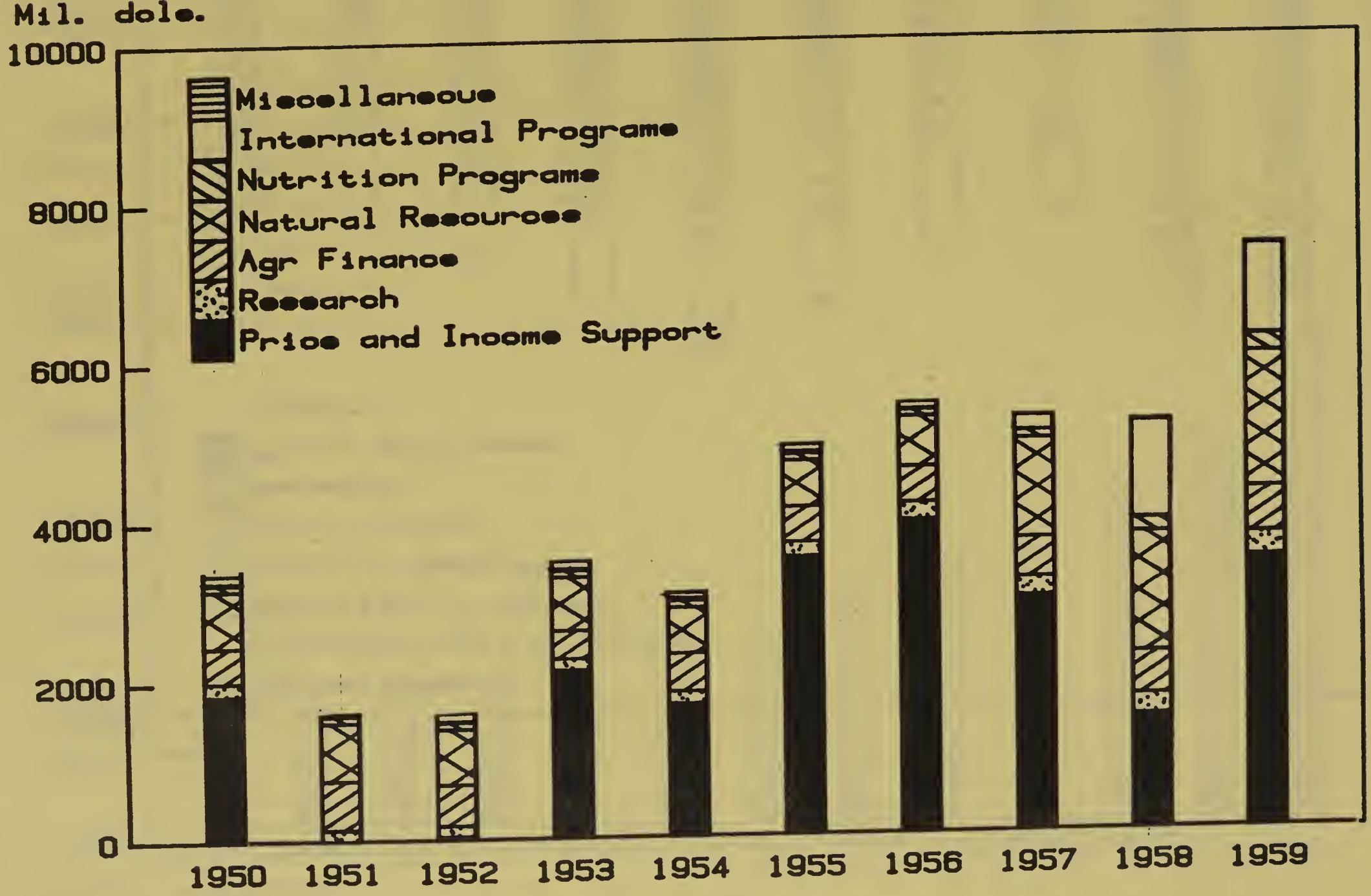


Figure 1--Continued

Agricultural Program Outlays, 1960-69

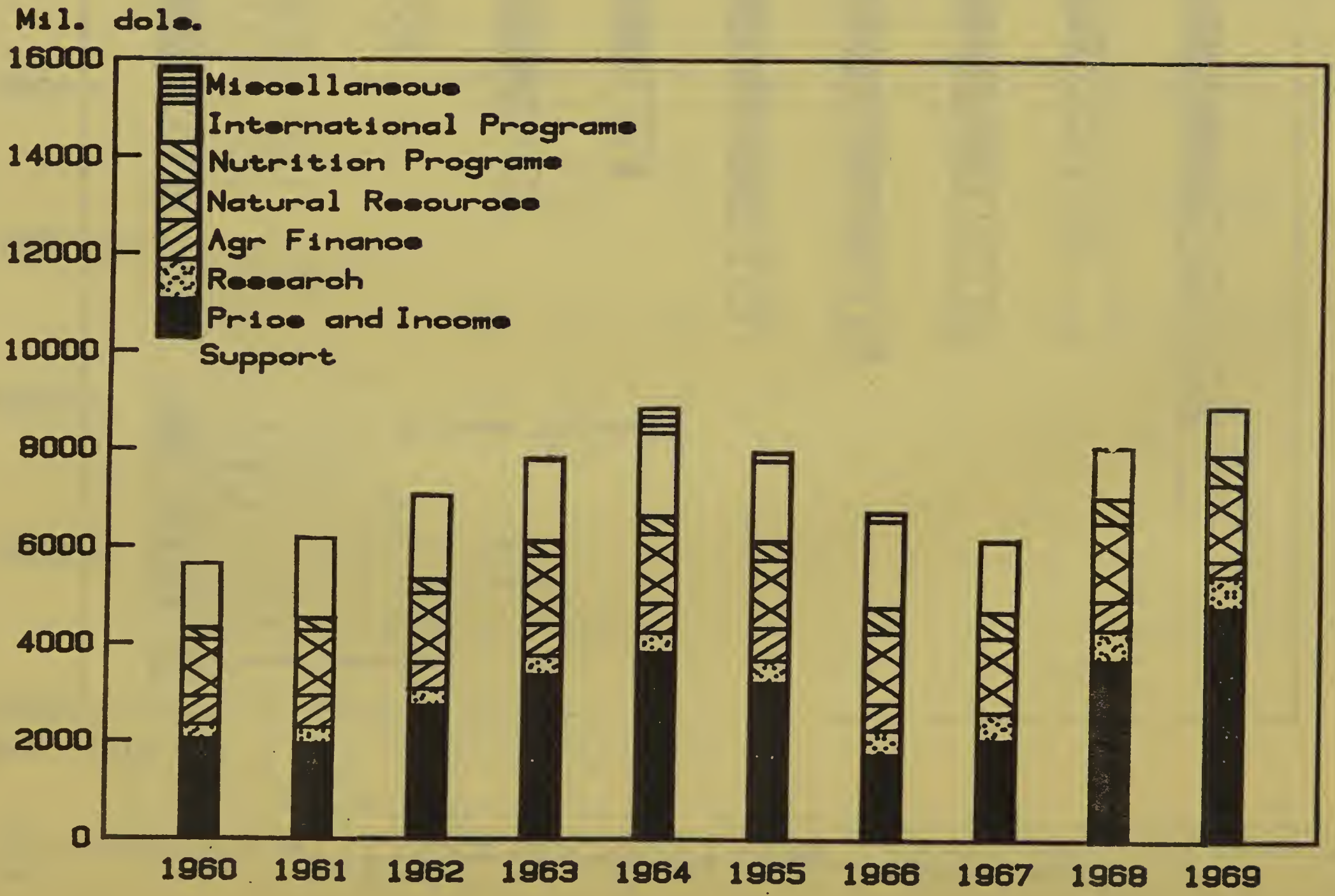
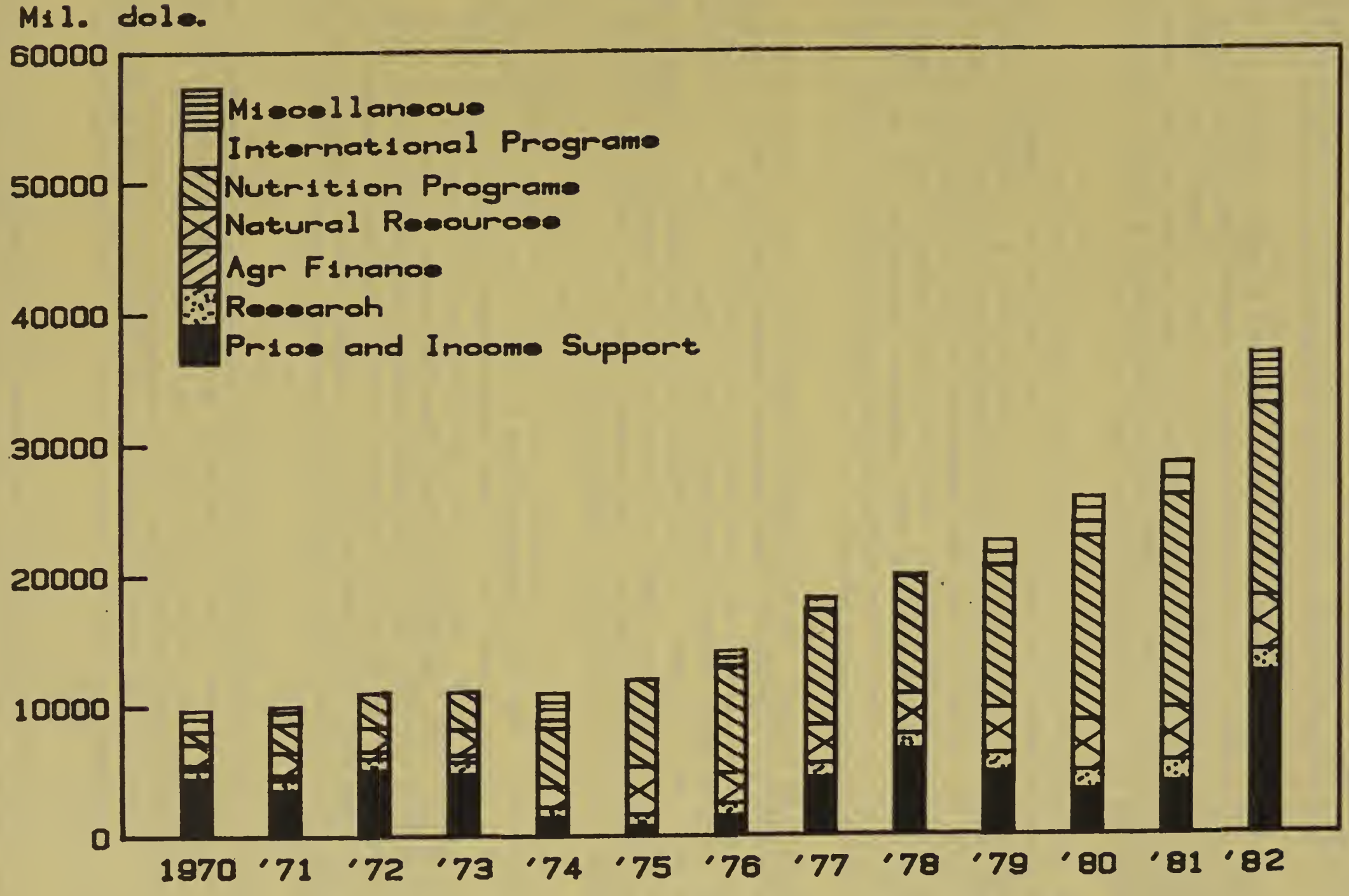


Figure 1--Continued

Agricultural Program Outlays, 1970-82



The 1965-72 Period: This period marks a transitional phase for U.S. agriculture. Legislation enacted during this period operated on both the demand for and supply of farm products. The Food and Agriculture Act of 1965 offered commodity price support at or near world price levels to protect farmers from unexpected short-term declines in prices; income support above equilibrium levels by making direct payments to producers who participated in acreage control programs; and control of production through voluntary programs, with the authority to offer diversion payments when necessary.

The Food Stamp Act (passed in 1964) signaled a major increase in program outlays intended to increase the domestic demand for farm products. Expenditures started off modestly, but increased significantly by the early seventies. PL-480 was reauthorized, and along with the Food Stamp and School Lunch Programs, began a transition from a program for the disposal of food surpluses to an instrument of economic aid.

The Agricultural Act of 1970 suspended marketing quotas, acreage allotments, and base acreages for wheat, cotton, and feedgrains. Instead, a more generalized set-aside concept was employed where a farmer had only to place some amount of base acreage in a conserving use. The farmer was then free to produce any amount of crop not otherwise subject to restriction. This provided greater flexibility to farmers and took at least one step away from restrictive and often inequitable acreage allotments. In addition, a limit of $50,000 was placed on the amount of Government payment a wheat, cotton, or feedgrain farmer could receive.

The 1973-82 Period: While economic conditions varied substantially, the passage of the Agriculture and Consumer Protection Act of 1973 preserved in large measure the policies enacted in 1965 and 1970. It retained the basic loan program while formalizing the direct payment concept via the target price and deficiency payment. The 1973 Act also continued the set-aside approach to production control but made provision, too, for tighter controls on an individual commodity basis. The payment limit was continued but at the reduced level of $20,000 per farmer.

It was during the early seventies that U.S. agricultural exports grew tremendously. Exports increased from $7 billion in 1970 to over $40 billion in 1981. Export growth in 1973 and 1978-79 was accompanied by significantly rising prices. U.S. export sales, assisted by the Commodity Credit Corporation (CCC), amounted to less than $1 billion in 1973, dipped to around $250 million in 1974, and rose fairly steadily to some $1.5-$2.0 billion in the late seventies and early eighties. Carryover stocks dropped to low levels. Because of the market situation, agricultural program outlays for income stabilization and price support declined dramatically over the years 1974-76.

Toward the end of the decade, significant increases in production, encouraged by the export demand of world markets, generated supplies of wheat and feedgrains at a rate faster than utilization could handle. The result was accumulating stocks and downward pressure on prices. Deficiency payments were made to rice growers in 1976 and sorghum, barley, and wheat producers in 1977. Government outlays increased dramatically in 1977 from the market growth years of 1974-76.

In 1977, major farm legislation was passed by the Congress. It indexed changes in the target price to cost of production for wheat, feedgrains, rice, and

cotton. By moving away from an equivalent feeding value for the minor feedgrains, an unstable support arrangement was introduced. More importantly, however, the passage of the 1977 Act introduced the farmer-owned grain reserve for wheat, feedgrains, and rice. In implementing the reserve, its buffer stock and price support objectives tended to get mixed. Still, the reserve did provide an extended loan arrangement for farmers and gave rise to Government outlays beginning in 1978. Because of the drought in 1980, program expenditures moderated somewhat. However, since then, they have escalated sharply, nearly tripling as a result of weak demand and record supplies.

Currently, program features of the Agriculture and Food Act of 1981, include retention of the farmer-owned reserve, implemented in the 1977 Act, with the elimination of the call price except in emergency situations. Target prices and loan rates are mandated by the 1981 Act, although the Secretary is given considerable discretion in making adjustments (although peanuts are adjusted by a cost of production formula).

Program Outlays Overview 1/

U.S. agricultural program outlays reflect actions undertaken by the Federal Government to influence the supply of and demand for agricultural commodities, farm product prices, and farmers' incomes. In addition, they also involve spending for rural infrastructure, research and education programs, and health and nutrition activities. While some expenditures are targeted directly at farmers, a significant proportion are of a less direct and less immediate nature.

We have chosen to group agricultural program outlays according to eight program categories. These include:

- o Farm income support and price stabilization,
- o Research and marketing services,
- o Agricultural credit,
- o Agricultural land and water conservation,
- o Other natural resource management,
- o Rural development,
- o Nutrition programs, and
- o International commodity assistance.

The first four categories relate most directly to production agriculture. Even here, the benefits of the research and marketing services category and the agricultural land and water conservation category are less direct or at least accrue over an extended period. Natural resource programs are of benefit to farmers and many others, while the rural development programs relating to rural infrastructure are shared by many rural residents. Nutrition programs and international commodity assistance involve demand enhancement, which benefits the farmer, while at the same time meets other domestic and foreign policy goals that extend far beyond the farmgate.

Total Outlays of Agricultural Programs. Total program outlays include expenditures in each of the eight categories plus offsetting receipts. As can

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1/ Cost data included in this paper cover the period 1950-82. They are reported on a fiscal year basis, corresponding loosely with crop years. A detailed listing of outlays by category is provided in table 1.

be seen in table 1, total outlays have ranged from $3.3 billion in 1951 to ten times that amount or $33.9 billion in 1982. The composition of these outlays has changed markedly over the years and, importantly, only a portion of these can be viewed as direct Government support of farmers.

Farm income support and price stabilization. Outlays in this program category represent actions intended to most directly benefit farmers. The level of outlays ranged from no net outlays in 1951 (due to loan repayments) to an estimated $12.3 billion in 1982 (table 1). Among the specific activities undertaken by the Federal Government to stabilize income and support prices have been: price support loans and direct payments, Federal crop insurance, expenditures made in support of the International Wheat Agreement (until 1965) and the wool and sugar programs, the removal of surplus commodities (primarily Section 32 purchases), and agriculture and emergency credit (including FmHA disaster and economic emergency loans).

Research and Marketing Services. Activities in this category fall into three areas. First, there have been outlays for marketing activities (Agricultural Marketing Service). Second, health and safety inspections are provided at various points in the production, processing and marketing chain. Finally, a variety of research and statistical and economic intelligence functions are undertaken. Expenditures in this general category have ranged from $143 million in 1952 to $1.7 billion in 1982 (table 1).

Agricultural Credit. These outlays include a mix of farm credit programs (table 1). Farm Credit Administration overhead for farm ownership loans is included, until this was moved off-budget in the late sixties. Farm operation loans cover all FmHA lending through 1969; thereafter, separate accounting of agriculture and emergency credit loans and rural development loans were made. Rural electric and telephone program outlays were shifted in part to rural development and to an off-budget status in the early seventies.

Agricultural Land and Water Conservation. Program expenditures here belong in three categories: agricultural conservation payments, including loans made by the CCC; SCS expenditures for planning and engineering; and conservation reserve (that is, land retirement) payments to farmers. In general, outlays before 1957 amounted to $200 to $300 million annually. With the introduction of the Conservation Reserve in 1957, outlays rose to $850 million dollars in 1959 and then slowly declined through the mid-seventies (table 1).

Natural Resource Management. A related, yet distinct category of outlays involves programs targeted to natural resources but less directly related to agriculture. These include the land management programs (mainly Bureau of Land Management), forest resource activities (Forest Service), and water resource programs (Department of the Interior and USDA). The latter set of water resource outlays has involved some amount of irrigation development. Although these programs might not usually be attributed to agriculture, farmers realize some indirect benefit from the flood protection and reclamation activities they represent. Of course, others receive benefits as well so it is not entirely appropriate to assign the full outlay in this category to farmers. Outlays for the natural resources category have grown steadily from $300--$400 million annually in the fifties to over $3 billion in 1982 (table 1).

Rural Development. Expenditures in this category have been sporadic over time. This reflects, at least in part, the shifting of programs between

budget categories and the movement of certain activities off-budget. Included in this category are FmHA loans for housing and a variety of FmHA loan programs for rural facilities and services (table 1). Farm credit is accounted separately so outlays in this category provide only indirect benefits to farmers (for example, rural community sewer and water systems). Funds are not provided under this category for infrastructure related to farm production or marketing (for example, roads).

Nutrition Programs. Several nutrition assistance programs were initiated in the post-World War II years. Best known is the Food Stamp Program but also important have been the School Lunch (actually begun in 1946), Special Milk, Summer Feeding, and Women, Infants, and Children (WIC) Progams. These all started out modestly, with less than $100 million spent annually through most of the fifties, with an increase in 1965 due to the introduction of the Food Stamp Program, and then significant increases over the seventies (table 1).

International Commodity Assistance. International food assistance and concessional sales under PL-480 were begun in 1954. By 1958 net outlays had grown to over $1 billion each year and continued at quite high levels until dropping back during the seventies (table 1).

Interpretations and Limitations of Data

Federal budget outlays for agriculture can be analyzed in terms of a variety of policy-related questions: How efficient and effective are the outlays in terms of achieving the intended objectives? What are the ultimate consequences of the outlays? To what extent do the outlays represent transfers from the rest of society to agriculture? Does the distribution of ultimate benefits from these outlays suggest that they are progressive or regressive? To what extent do the outlays affect production and marketing costs, efficiency of production, and the competitive position of U.S. agriculture in world markets? The last question is of interest to those studying trade and how international markets for agricultural products are affected by domestic farm and food policies.

It would be useful to sort out the extent to which Federal budget outlays directly or indirectly subsidize U.S. exports and thus affect the competitive position of the United States, vis-a-vis other exporters of agricultural products. However, that analysis is beyond the scope of this paper. Hopefully, the data developed for table 1 will serve to stimulate that further interpretive work.

What Federal budget outlays should be charged to agriculture? Direct farm program expenditures are easy to categorize. As pointed our earlier, programs such as the Food Stamp and related nutrition programs have dual purposes. And, while they stimulate consumption of agricultural products, that is no longer their primary purpose. To illustrate the point, should general welfare programs (Aid to Dependent Children, for example), which certainly stimulate consumption of food, be treated differently from Food Stamp outlays? For that matter, how do these differ from general fiscal and monetary policies which may stimulate employment, income, and trade, hence demand for agricultural products? Federal programs which underwrite development of waterways, roads, and airports, which service transportation of agricultural products, also constitute indirect assistance to the farm sector. These examples merely illustrate the difficulty of measuring with any precision the extent of assistance provided to agriculture by Federal programs and budget outlays.

The same difficulty arises in measuring assistance to other sectors of the U.S. economy as well as assistance provided to agriculture in other nations by their respective governments. The matter is complicated by further direct and indirect assistance provided by State and local governments. Thus, until further methodological and empirical work is done, attempts to compare assistance to agriculture among national governments are likely to result in crude approximations at best.

Net outlays for all Federal agricultural related programs rose from the $1-$3 billion range in the early fifties, to the $10-$12 billion range in the early seventies, past the $20 billion range in 1979, and surpassed $30 billion in 1982, only 3 years later. The outlays dipped to a postwar low of $1.1 billion in 1951, but, as a percent of all Federal budget outlays, the low point came in 1952 (2.3 percent). The outlays rose to 7.6 percent of the Federal budget in 1955 and hovered in the 7 to 9 percent range until 1965. Thereafter they declined to the 3 to 5 percent range where they remained through 1982.

The total outlays for all agricultural related programs mask the large changes that have taken place in the relative mix of program outlays. The most dramatic change has been the increase in the relative importance of nutrition programs. These were insignificant in the fifties and sixties, first exceeded $1 billion in 1971, and represented more than half of all agricultural program outlays by 1975. Moreover, the growth in outlays for nutrition programs was persistent from 1970 through 1981.

In contrast to the nutrition program outlays, costs of the traditional farm commodity programs (table 1) have been highly erratic and generally declined in importance relative to total agricultural program outlays. In 1951, net support program outlays were actually negative as repayments exceeded gross outlays.

The farm income support and price stabilization programs, combined with research and marketing services, agricultural credit, and conservation programs, account for the bulk of Federal outlays directly in support of agriculture. Outlays for "other programs" are indirectly supportive of agriculture (especially the domestic nutrition programs and the PL-480 food aid programs), but, as suggested earlier, so are many other Federal policies and programs not carried under the "agriculture" rubric. Such indirect assistance to agriculture also increases the difficulty of comparing levels of assistance to agriculture among countries.

Outlays in the "other programs" group (table 1) could be adjusted to reflect the fact that not all the benefits of these outlays flow to farmers. For example, some analysts have suggested that the net addition to food demand represented by the nutrition programs may be in the 40 to 50 percent range. The effect of computing adjusted total agricultural program outlays, which include only half the nutrition program outlays, is reflected in table 2 where such adjusted outlays are shown as a percentage of total agricultural receipts. Again, such an adjustment is not conceptually complete, since persons other than farmers benefit from expenditures in all the groupings (research, for example), and farmers certainly benefit from outlays not included in table 1.

For purposes of this paper, the most pertinent outlays are those most directly attributable to agriculture. These are the outlays totaled in table 1,

particularly the farm income support and price stabilization outlays. Total agriculture and resource outlays (table 1) have ranged from a low of under $1 billion in 1951 to a high of over $14 billion in 1982, with outlays in most years falling in the $2 to $6 billion range. As a percentage of all agricultural program outlays, these direct agricultural and resource outlays have been erratic but have generally declined from more than 80 percent in the fifties to the 20-to-30 percent range after 1974 (table 2).

Farm income enhancement and price stabilization outlays (table 1) generally increased over the 1950-82 period. In the earlier years, high price supports led to production greater than market equilibrium levels. Loan forfeitures translated into Government stock holdings. Exports were promoted via PL-480 and subsidies. Land retirement schemes were employed, at considerable taxpayer expense.

In the sixties, price supports were lowered, direct income payments were initiated, and paid voluntary land diversions were tried. Government stocks were gradually worked off and exports expanded. CCC price and income support payments dropped noticeably during the mid-seventies, but rebounded sharply in the latter part of the decade as good crops outpaced the growth in demand.

The relationship between changes in farm income enhancement and price stabilization outlays and changes in the level of farm production is significant. A simple regression demonstrates the relationship:

$$C = -8358.9 + \underset{(41.7)}{210.5}\ F1 + \underset{(23.5)}{47.2}\ F2 - \underset{(42.7)}{186.4}\ F3$$

$R^2 = 0.56$
$F = 13.9$
( ) = standard error

where: C = change from preceding year in farm income stabilization outlays (million $), (table 1)

F^1 = change from preceding year in U.S. foodgrain (rice and wheat) production (million metric tons)

F^2 = change from preceding year in U.S. feedgrain (corn, sorghum, barley, oats) production (million metric tons)

F^3 = change from preceding year in U.S. fats and oilseeds (soybeans and products) production (million metric tons)

These results suggest that, on average, a 1 million metric ton change in foodgrain production from the preceding year has been accompanied by a $210 million increase in program outlays for farm income stabilization. Associated with a 1 million metric ton change in feedgrains output from the preceding year has been an increase in direct support to farmers of $47 million. A 1 million metric ton change in soybean output, a substitute in production for feedgrains, has yielded a $186 million decline in program costs.

These relationships can be converted to outlay elasticities for farm income stabilization expenditures with respect to changes in production. A 1-percent change in foodgrains output has implied a 2.85-percent change in direct

Table 2--Federal agricultural program outlay comparison, 1950-82

Year	Outlay comparisons			
	1 1/	2 2/	3 3/	4 4/
1950	0.66	0.57	0.85	0.00148
1951	-.71	-.40	.57	.00135
1952	.04	.03	.69	.00129
1953	.72	.63	.87	.00131
1954	.66	.56	.84	.00138
1955	.80	.72	.90	.00140
1956	.80	.73	.91	.00139
1957	.65	.57	.88	.00165
1958	.44	.28	.65	.00264
1959	.62	.47	.75	.00325
1960	.57	.36	.64	.00345
1961	.53	.32	.60	.00347
1962	.63	.39	.62	.00384
1963	.66	.42	.63	.00383
1964	.69	.46	.67	.00463
1965	.65	.42	.64	.00472
1966	.52	.27	.52	.00624
1967	.64	.34	.53	.00605
1968	.67	.45	.68	.00590
1969	.76	.55	.72	.00639
1970	.74	.48	.66	.00961
1971	.68	.38	.56	.02151
1972	.74	.42	.57	.02337
1973	.72	.42	.58	.02059
1974	.57	.14	.24	.02390
1975	.35	.06	.18	.03766
1976	.52	.11	.21	.04196
1977	.75	.24	.32	.04583
1978	.79	.33	.42	.04583
1979	.71	.22	.30	.04246
1980	.65	.15	.23	.05130
1981	.65	.16	.24	.05660
1982	.85	.36	.43	.04971

1/ Farm income support and price stabilization outlays as a percent of all direct outlays for agriculture.

2/ Farm income support and price stabilization outlays as a percent of total agricultural program outlays.

3/ Direct farm program outlays (farm income stabilization, research, agricultural finance, and agricultural land and water resources) as a percent of all agricultural program outlays.

4/ Adjusted total agricultural program outlays (including only half of the nutrition program outlays) as a percent of total agricultural receipts.

Government outlays (at the mean). For feedgrains, a 1-percent increase in production has been related to a 2.19-percent increase in expenditures. The oilseeds elasticity is -2.39.

Farm income enhancement and price stabilization outlays have ranged from 50 to 80 percent of total agriculture and resource outlays (table 2). Thus, these support programs have tended to consume more of the outlays directly related to agriculture than have expenditures on research and marketing, credit, and resource conservation. However, the volatility of the total is most closely associated with the entitlement nature of commodity programs and constantly changing economic conditions in the farm sector.

Budget outlays most directly associated with support for farmers (table 1) have accounted for a decreasing share of all agricultural program outlays over the 1950-82 period (table 2), a decreasing share of all Federal budget outlays, and a decreasing share of total agricultural receipts. Farm income enhancement and price stabilization outlays have averaged well under 10 cents per dollar of farm receipts since 1950 and averaged significantly lower from 1974 to 1981.

In the context of total Federal outlays, farm income enhancement and price stabilization programs absorbed from 3 to 5 cents out of every Federal budget dollar during the fifties and into the sixties. The trend has been significantly down, however, with outlays in the past decade running at a penny or so per dollar of U.S. Government outlays.

The distribution of budget outlays for agriculture should be noted. Other than commodity specific program outlays, the benefits of Federal expenditures on agricultural programs are nominally available to all farmers. The ultimate effect of how these outlays is distributed is not fully understood. As might be expected, the benefits of commodity specific program outlays tend to be distributed somewhat proportional to volume of production, subject to constraints imposed by payment limitations. Moreover, the commodity programs obviously benefit most directly the producers of those commodities for which support programs exist.

Conclusions

The outlay data presented in this paper represent only a crude first step in the estimation of public assistance to agriculture, and especially in the comparison of such assistance across countries. More precise estimates and comparisons of assistance await further refinement of outlay data, particularly data on outlays which indirectly assist agriculture. Moreover, such analyses will have to take account of other forms of assistance, including tax policy, tariff and nontariff trade-related assistance, and health and safety regulations which provide indirect support. When comparing aid to agriculture across countries it is also important to take account of the variation in importance from country to country of the assisted commodities as a part of total agriculture. Finally, comparisons of assistance across countries has to take into account the varying roles of subnational governments (State, provincial, etc.) in providing assistance to agriculture.

Hopefully, the data presented will stimulate further analyses to address questions about comparative assistance to agriculture among countries, assistance to agriculture relative to assistance to other sectors of the U.S. economy, the cost-effectiveness of outlays in achieving program and policy objectives, and the ultimate effects of the outlays on the health of agriculture and the larger economy.

GOVERNMENT POLICY IN SUPPORT OF DOMESTIC AGRICULTURE: COSTS AND BENEFITS

Canada

Richard R. Barichello

Introduction

Although Government support for agriculture has a long history in Canada, the extent and importance of this involvement has grown substantially in the last two decades. In particular, Government-sanctioned interventions in farm markets and Government-financed expenditures in the agricultural sector have become frequent in the seventies. From a position of little (if not negative) protection in the fifties, Canadian agriculture is now extensively affected by the public policy measures of economic regulation and subsidization.

Financial constraints faced by Governments in the current eighties decade are forcing reconsideration of the large Government expenditure required by present farm programs ($1 billion in 1980, Lattimore, table A.1). But, in turning away from direct financial outlays, market intervention is continuing to be used as a major tool of agricultural policy. One can see evidence of this in recent Federal Government plans to introduce a red-meat marketing board and an agricultural trade Crown operation.

The issue remains large and has been the subject of some controversy. As early as 1969, the Federal Task Force on Agriculture challenged this trend toward increased Government interventions. In the mid-seventies, the Food Prices Review Board raised similar concerns, and recently the Economic Council of Canada completed a major study of regulation in Canadian agriculture (Forbes, Hughes, and Warley). This paper follows similar lines of inquiry by attempting to measure some of the economic effects of Canada's major farm programs. More narrowly, my purpose in this paper is to analyze Government intervention, in some detail, for six agricultural commodities to provide estimates of their social efficiency (resource allocation) losses and income transfers among selected groups.

The choice of the six commodities reflects my assessment of agricultural policy developments in the seventies. During this period, efforts to stabilize farm prices and incomes continued from earlier years, and there was a substantial increase in net Federal Government expenditures to agriculture, which grew at an annual real rate of 3.2 percent from 1970 to 1978 (Forbes, Hughes and Warley, p. 12). But, the two developments which seem particularly noteworthy to me are the increasing cost of maintaining the statutory (Crow) rates for rail transportation of export grain and the increase in the number of marketing boards which possess the power to control supply and choose price. As a consequence, I have chosen to examine those commodities directly affected by these developments: grains and oilseeds (specifically wheat, barley, and rapeseed), poultry meat (broilers), eggs, and milk. These commodities, incidentally, account for almost 60 percent of all farms and total farm cash receipts in 1981.

This paper is organized to first discuss the bases for Canadian agricultural policy. Following a brief outline of domestic agricultural policy, in the next section, the paper turns to measurement of various economic effects for each of the six commodities, and ends with some conclusions.

Bases for Domestic Agricultural Policy

There would seem to be a long list of widely held perceptions in Canada which can be considered as the political, social, and economic bases for domestic agricultural policy. At the more general level, Forbes, Hughes, and Warley include influential perceptions that farmers are a beleagured minority opposed by the hostile forces of nature; by rapacious and inefficient suppliers, processors, and handlers; and by the subsidized producers of other countries; and that farmers are being rewarded for their efforts with meager and unstable returns. And, who can doubt that the physiocratic-agricultural fundamentalists' beliefs that farming is an activity that has a value that is greater than its contribution to economic product at market prices, that farmers are people with a disproportionate share of social virtues, and that family sized farms should be maintained as the basic economic and social unit in agriculture and in rural society are ideological notions that still hold powerful popular and political sway.

Somewhat more specifically, there appears to be a distrust of unregulated farm markets by many governments and farmers. There is a widely held perception that farmers have insufficient bargaining power. Accompanying the latter view are beliefs that increased market power by farmers would only neutralize the existing market power of processing, distributing, retailing, and supplying firms, and that farm monopolies will be less burdensome than nonfarm monopolies. There is a growing farm-level demand from those sectors with rapid changes in technology to control their own markets by raising farm prices and controlling aggregate supplies. Importantly, this demand is met by a willingness on the part of governments to act to buffer the effects of technical change. Finally, for reasons given above and partly due to the success of farm-interest groups, there appears to be a political desire to redistribute income to farms.

Two economy-wide concerns affect agricultural policy. First, in line with an overall objective of enhancing economic growth and development throughout the economy, both Federal and Provincial Governments desire and promote the development and growth in size of their respective agricultural sectors. Clothed more extremely, this objective emerges in some jurisdictions as desire for agricultural self-sufficiency. Second, consistent with a broader goal of reasonable price stability, many agricultural policies arise from a desire to stabilize farm-gate prices. In more aggregate terms, this concern with price stability can be manifested as a concern about inflation, and from time to time there are worries about whether food prices are contributing to inflation.

When interventions in agricultural markets have seemed appropriate to governments, a variety of economic rationales have been used. These include "destructive competition," structural imperfections, inadequate information, externalities, income distribution, agricultural fundamentalism, and self-sufficiency.

More recently, three factors appear to be of increased importance as part of the environment affecting agricultural policy. First, with the increased integration of agriculture with the rest of the economy, concerns with inflation, balance of payments, fiscal restraint, and other Government program interactions have had a greater bearing on agricultural policy. Second, issues of national unity and Federal-Provincial relations have had an impact. "...Divided jurisdictional responsibility for agriculture and food, and the tendency for strong provincial governments to make program initiatives at the

regional level and to seek a more influential role in national policy development are...factors that have left their mark on national agriculture and food policy" (Forbes, Hughes, and Warley, p. 17). Finally, the political environment has featured a generally unified and highly effective farm lobby as well as competition between political parties trying to attract regional blocks of farm votes with locally appropriate commodity programs.

Current Policy Structure

Before outlining key elements of current policy, a review of some quantitative dimensions of Canadian agriculture might be useful to appreciate the ensuing discussion and measurement. The size of the industry, in terms of cash receipts and number of farms, broken down by commodity groups, is shown in table 1. Cash receipts totaled almost $16 billion in 1980, and by the following year, there were 170,000 farms with sales of at least $2,500. In 1977, the share of primary agriculture in gross national product was 4.8 percent.

An important part of the general nature of agricultural policy in Canada can be gleaned from Government expenditure data, and the following table provides an overview. First, Brinkman summarizes Government expenditure by program type (Table 6-1, p. 51), and this table is updated in table A-1 of Ralph Lattimore's paper below. This can be summarized as follows for 1978-79, and inspection of Lattimore's data for 1980 shows general similarity.

Table 1--Canadian agriculture: Total farm cash receipts and number of farms, 1980/81, by commodity

Commodity	Farm receipts (1980)	Farms by principal commodity (1981)	
	Billion dollar	Number	Percent
Grains and oilseeds	5.351	107,866	39.7
Beef	3.663	60,139	22.2
Dairy	2.320	41,905	15.4
Hogs	1.403	12,301	4.5
Poultry and eggs	1.058	5,438	2.0
Fruit and vegetables	.777	10,269	3.8
Other crops	.859	8,308	3.1
Other livestock	.198	9,054	3.3
Other	.180	16,324	6.0
Total	15.809	271,604	

Source: Statistics Canada, Net Farm Income, 1981 Preliminary; and Statistics Canada, 1981 Census of Agriculture: Canada.

This listing neglects at least three important aspects of domestic agricultural policy. The Provinces of Canada undertake a variety of agricultural programs and they are neglected above. Because they are responsible for virtually all extension work and field services to farmers, table 2 represents only a fraction of the total extension expenditure in the country. Provinces also engage in direct payments to farmers, typically by way of commodity "stabilization" programs and credit subsidies. Like most agricultural stabilization programs in Canada, these provincial schemes are more often concerned with income enhancement or transfers than price or income smoothing, but they can be seen in Lattimore (table A.1) to account for little more than 10 percent, on average, of Federal expenditure in this area.

Second, the implicit subsidy contributed by the railways to export grain producers by virtue of the statutory (Crow) rates is ignored. This item, too, is found in Lattimore (table A.1) and the sum is large (estimated to be $218 million Canadian in 1980). The importance of the Crow rates in total can be seen in Harvey and Gibson, notably the substantial increase in the Crow benefit (grain transportation revenues--costs) in recent (and forecast) years. For 1980, this magnitude is calculated by Gilson to be $470 million. Alternatively, the fixed transportation rate from Saskatchewan to export terminal for wheat is $5 per ton, while the calculated cost (at current technology and rail line procedures) is $22 per ton.

Finally, the third important omission of Government agricultural policy in table 2 is the market regulation imposed by marketing boards. These boards,

Table 2--Percentages of net direct expenditures by the Federal Government on major agricultural policies and program areas, Canada, fiscal year 1978/79

Policy/program area	Federal expenditures
	Percent
Direct payment through commodity programs	30.5
Storage and freight assistance	19.3
Technical and food aid	14.0
Research	11.1
Administrative and miscellaneous	6.1
Crop insurance	5.5
Social adjustment and rural economic development	4.8
Testing service	3.8
Trade promotion	3.2
Extension and information services	.9
Direct payments through social programs	.5
Assistance in producer financing	.3
Total	100.0

Source: Forbes, Hughes, and Warley, tables 1-4, p. 13.

sanctioned by statute and typically compulsory, are horizontal cartels of farm producers. They are not unique to Canada but have emerged over the last 20 years as a major policy tool of considerable economic power, now covering over half of gross farm sales. The powers attributed to different boards vary tremendously from the benign to full monopoly privileges. The latter cases are those with the power to control aggregate supplies, usually by means of producer marketing quotas and some form of import restriction.

These "supply-management" marketing boards (or equivalent arrangements) are presently found in the dairy industry (both fluid-and industrial-milk sectors); the poultry industry, including broiler chicken, eggs, and turkey; and tobacco.

Because these boards have the most profound economic effects, the major commodities involved (milk, broilers, and eggs) will be analyzed in this paper. This is not to say that turkey and tobacco boards do not have relatively important effects or that the remaining marketing boards, without supply control powers, cannot influence producer returns, consumer prices, or resource allocation. It is simply beyond the scope of this paper to cover these other examples. I now turn to the individual commodity analyses to provide some quantification of the effects of policy generally alluded to so far.

Measuring the Commodity Program Effects: Grain and Oilseeds Sector

Wheat. In describing the measurement of costs and transfers in each of the three grain and oilseed commodities (wheat, barley, and oilseeds), I will first describe the major policy issues, illustrate them in a supply/demand diagram, describe how the relevant values were arrived at, and finally calculate gains and losses.

In the production of wheat, world-market prices prevail, but there are a variety of Government programs or rules which subsidize production. The most important of these is the statutory (Crow's Nest Pass) rates for transporting export grain. Rail freight rates for moving grain from Prairie elevators to export terminals are still fixed at levels first established in 1897. Recent efforts by the Federal Government to come to grips with this issue have generated the Gilson Report, upon whose estimates this paper shall rely. The effect of this transportation subsidy, certainly in the short run, is to increase the farm-gate price of grain relative to its level with freely determined freight rates.

In addition, the Western Grains Stabilization Act (WGSA) guarantees that the average (across the Prairies) gross margin (cash receipts less cash expenses) in any one year will not fall beneath its previous 5-year average. The Federal Government pays two-thirds of the contributions to the stabilization fund, plus administration costs. This Government contribution is effectively a subsidy to participating farmers, increasing the net farm-gate price of grain.

Third, the Federal Government subsidizes the premium required for those producers participating in the Crop Insurance Program which provides all-risk insurance of yield variation. Finally, the Federal Government subsidizes both the interest costs of making advance cash payments to producers (prior to actual sale) and the interest rate charged to export buyers.

This list of five programs which affect the wheat market is not comprehensive. Provincial programs are ignored for reasons of data. The Temporary Wheat Reserve Program is ignored because no Federal funds have been incurred since 1973. Similarly, the Two-Price Wheat program is not included because it ended in 1978, and because it was largely a consumer subsidy. Its total producer benefits, averaged over the period, have a smaller effect than the Prairie Grain Cash Advance Program.

The wheat market in Canada, at the farm gate level, can then be analyzed as in figure 1. Canada is assumed to be a price taker on world markets, on the basis of Harvey's estimate that the (excess) demand curve for Canadian wheat is -20 or larger (in absolute value) (Harvey, pp. 19-21). The supply elasticity was assumed to be 0.5 in the long run, a value which appeared reasonable in light of substitution possibilities with beef at the margin. Few estimates of the supply elasticities of grains as a group (for example, to consider the effects of removing the subsidies on all grains simultaneously) exist for Canada, and this value was also assumed by Josling for the long run. P_o is the received price, P_e is the price that would be received without the subsidy distortion, $P_o - P_e$, and Q_o is the level of production, given the subsidies. One additional complication is added by the Canadian Wheat Board's delivery quota system. In many years these quotas limit the producers to market less than they would prefer. These quotas then take on an implicit value, and the supply curve cutting P_o and Q_o, S', is not the true supply curve, S, which would reflect only real opportunity costs.

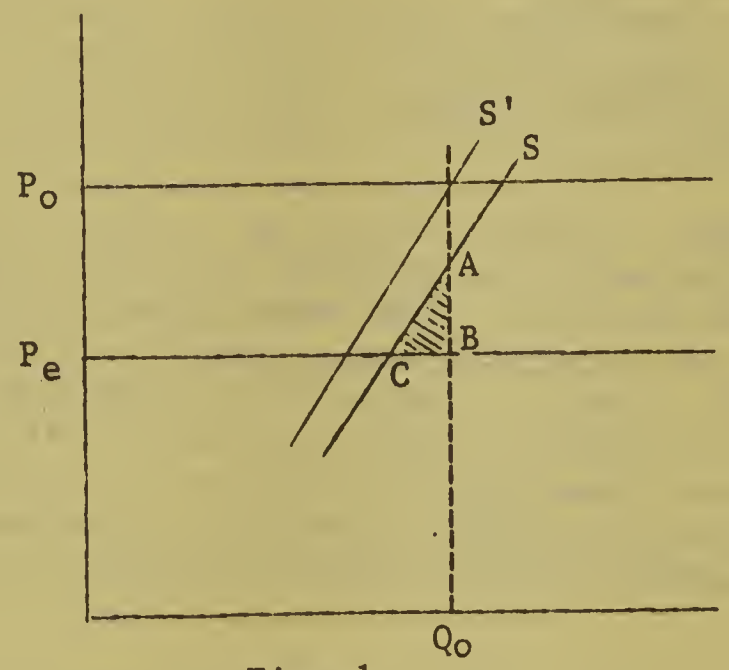

Fig. 1

The unregulated price and quantity are then given by point C. The familiar triangle of welfare cost is ABC, assuming no other distortions. The existence of other distortions generate welfare rectangles with a size given by the product of the distortion and the change in production due to the wheat subsidy. Producers gain by the rectangle $(P_o - P_e)\ Q_o$ less triangle ABC. Consumers are unaffected by these policies, so their net gain is zero. Whoever finances the subsidies noted above, in this case the Federal Government and the railways (delivering grain below cost), loses by the rectangle $(P_o - P_e)\ Q_o$.

Because of the recognized instability in the grain market, data were collected from the decade of the seventies. All prices were transformed into 1980 dollars and that was considered the key year for the analysis. The real farm-gate price of wheat increased over the 1971-81 period, and the fitted trend line was used to remove transitory movements. The estimated value for 1980, $178 per ton, was actually equal to the observed price. Because production levels showed less variability, the mean value for the most recent 5 year period, 1977-81, was used (20.374 million ton). The Crow subsidy was calculated from Gilson's recent report as the 1980 gap between rail transport costs and the legislated rate levels (a total subsidy of $470 million, or a per ton subsidy to wheat of $17.39. The WGSA subsidy, based on Federal contributions to the fund (not actual payments), was averaged over the program's history, 1976 to 1981, an average payment of $91.8 million in 1980 dollars. This was prorated to each eligible grain arbitrarily, by their respective shares in production, and for wheat this came to $2.98 per ton. Similar procedures where adopted for Crop Insurance, Prairie Grain Cash Advances, and Grain Export Credits. The 1976-80 Federal expenditure, in 1980 dollars, was averaged over the 5 years, allocated to eligible grains by their respective production share, and put in values per ton. For wheat, the unit subsidies were $$2.36 per ton for Crop Insurance, $0.25 per ton for Cash Advances, and $0.45 per ton for Grain Export Credit. The annual cost (value of the delivery quota was calculated by Lattimore (table B.6), also averaged over the years 1976 to 1980, was $7 per ton.

In terms of figure 1, this translates as Q_o = 20.374 tons, P_o = $178 per ton, P_e = $154.57 per ton, point A = $171, and point C = $19.44 million tons. With the total subsidy at $23.43 per ton, the transfers are readily calculated. Producers gain by $470 million per year, consumers are unaffected because we have ignored the old Two-Price Wheat Program, and taxpayers and railways jointly suffer the loss of $477 million. On the basis of Lattimore's estimates (table A.1) of the railway contribution to the Crow Gap, this $477 million cost breaks down to $306.9 million from the Federal Government and $170.5 million from the railways.

The social efficiency gain (welfare loss) is not so quickly reckoned. To begin with, the familiar triangle loss, ABC in figure 1, is relatively trivial, $7.67 million. However, other resource allocation effects can be considered. First, there is the problem of other significant distortions in the economy affected by this policy-induced increase in wheat production. Due to Canadian tariff policy, the social cost of foreign exchange does not equal the private cost, and because wheat is traded, this generates an efficiency effect. Jenkins and Kuo have estimated the (social) value of a (private) dollar of foreign exchange is $1.07, generating a foreign-exchange benefit from increased wheat exports of $10.1 million. Some of this will be offset by imported inputs, and assuming a share of 25 percent for imported inputs in total cost, the net foreign exchange benefit is $7.6 million. No other

distortion effects were calculated. On this basis, foreign exchange benefits offset the triangle loss of $7.67 million, to leave virtually no efficiency effects.

However, I have ignored one reputedly important efficiency effect of Wheat Board policy, and that is the effect on resource allocation of the delivery quotas. It is widely acknowledged (Harvey, Furtan, Lee, and MacLaren) that the quota system has led among other effects to extensive land use, low adoption rates for high yielding varieties, and low levels of fertilizer and chemical use. These arguments imply that the quota system has caused the real resource supply curve to shift to the left from where it would otherwise be. The efficiency affect is potentially enormous, being calculated as the area between these two supply curves. MacLaren, for example, has estimated that Canada would produce 5 million tons more wheat in the absence of these quotas, due to the change in resource use. Even if such an effect has only pivoted the supply from some point halfway along its length, MacLaren's estimate in the context of figure 1 would imply a welfare cost of some $300 million. Measurement of this effect is beyond this paper, and I merely point it out to show that, in all likelihood, the efficiency effect of the delivery quota system swamps any other efficiency effects by several orders of magnitude, and that any concerted effort to measure the efficiency effects of Canada's grain policy requires examination of this issue.

Barley. The barley market was analyzed in an analogous manner to the wheat-market analysis outlined above. The only additional consideration was the feed grain policy in Canada, specifically the corn tariff of $0.08/bushel ($3.15/ton). All of the earlier caveats continue to apply, notably the possibility of program omissions, efficiency effects of the CWB delivery quotas, and the long-run accuracy of the Crow benefit/gap calculations.

The data are the following. The estimated trend price, 1980 dollars, is $120/ton, and production is 11.058 million tons. The Crow subsidy is $17.41 per ton, the corn tariff $3.15 per ton, WGSA subsidy of $1.15 per ton, Crop Insurance subsidy of $0.90 per ton, Cash Advance subsidy of $0.10, and Grain Export Credit subsidy is $0.17 per ton. The total subsidy is $22.88 per ton, and the quota value, translated into barley production is $5.04 per ton. In terms of figure 1, P_o=$120, P_e=$97.18, Q_o=11.058 million tons, point A = $114.60, and point C = 10.26 million tons. The welfare loss triangle, ABC, is $7 million, but an offsetting foreign exchange benefit of $3.7 million leaves a net efficiency loss of $3.3 million. Producers gain $246 million from these policies, which are financed by Federal Government, taxpayers gain $160 million, and the railroads $93 million. The corn tariff imposes a cost on feed grain users which is presently uncalculated.

Rapeseed. Once more, the procedures followed in the rapeseed market are the same as for the two preceding grains, except that the Prairie Grain Cash Advance Program does not apply to rapeseed. Furthermore, because real rapeseed prices have shown less of a pattern than wheat or barley prices, the mean value of the 1971-81 period was used. This price is $309 per ton, production is 2.632 million tons, the Crow subsidy is $17.06 per ton, WGSA is $5.10 per ton, Crop Insurance is $4.03 per ton, Grain Export Credit is $0.76, and the effective cost of grain delivery quotas in Board grains is $10.80 per ton. In terms of figure 1, the efficiency loss triangle is only $0.54 million, P_o= $309, P_e=282, Q_o=2.632, point A = 298, and point C = 2.565 million tons.

but with the foreign-exchange premium of $0.99 million, these calculations show a welfare gain from rapeseed policy of $0.45 million. Producers gain by $70 million, and this is financed by the Federal Government, $49 million, and railways, $22 million.

These results for the grains and oilseeds sector are summarized and compared to recent results by Josling, Harling, and Thompson, using comparable elasticity estimates to those of this paper.

The most notable results are the larger transfers to producers found in this paper. This is partly due to using 1980 dollars, but mostly due to the growth in the more recent estimates of the Crow Benefit. Fully three-quarters of my transfer estimates are due to the Crow Benefit. Finally, my efficiency losses are comparable if only the familiar triangle loss is considered. The foreign-exchange benefit reduces my net efficiency losses. Even so, I suspect these efficiency cost comparisons are virtually irrelevant compared to the important omission of the efficiency losses due to the delivery quotas.

Poultry Sector. The analysis of the poultry sector in Canada features fewer actual programs, but such market intervention, supply prices are not directly observable, and economic analysis requires some subtlety. Marketing boards exist for both broilers and eggs, and these markets feature administered prices (a pricing formula is usually involved); a variety of levies which reduce the net farm-gate price; aggregate and individual farm quotas; import quotas at relatively low levels; a variety of production rules regarding space requirements per bird; cycles of production per year, and bird weights in broilers; size limits per farm; and restrictions on vertical integration. The analysis will begin with eggs, in more detail, and broilers will be summarized secondly.

Eggs. The Canadian market for eggs can be summarized in Figure 2.

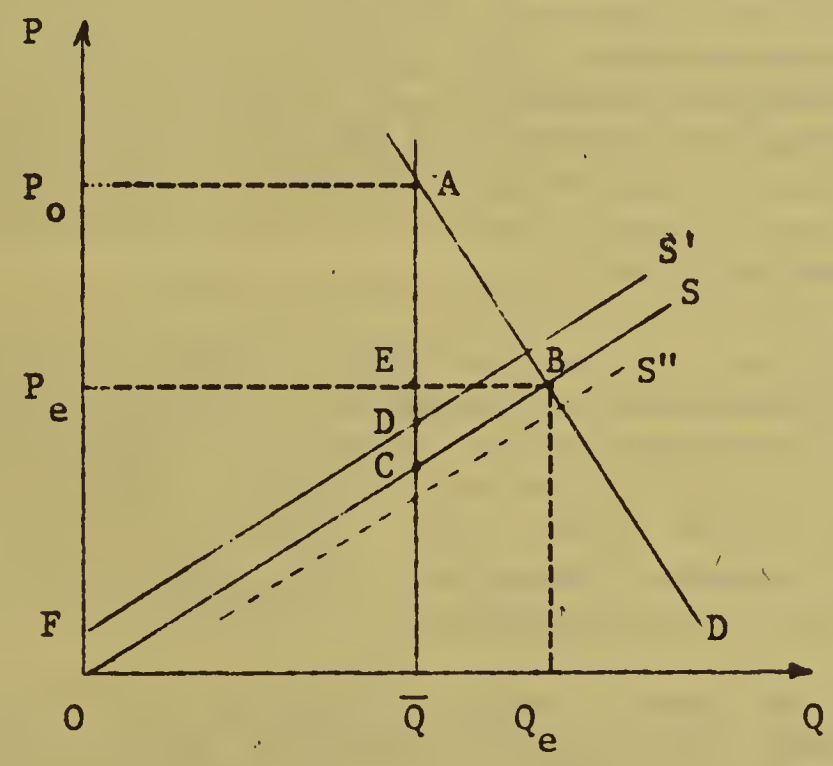

Fig. 2

This market operates by the board setting a price, P_o, and a quota on production Q. The net effect is to reduce output from Q_e and raise price above P_e, causing welfare costs and transfers, analogous to the familiar case of a monopolist. The producer gain will be P_oAEP_e less EBC, the consumer loss will be P_oABP_e, and the economy gain will be their sum, a loss of ABC. Additional twists are due to Canada's egg market regime. Reported prices are for table eggs, yet any surpluses are sent to the breaker market in Canada or the United States. A blend price between these two markets is the appropriate measure of P_o. Levies are collected from farmers to finance the administration of the regime (measured as DC). Not only does this mean that one can mistakenly identify S' as the supply curve instead of the true S, but it means an added resource allocation loss, DCOF, resources that would otherwise not be spent in the production and marketing of eggs. The various production restrictions such as farm size, limits, may have an effect on production costs. The present supply may indeed be S, but without production restrictions the supply curve could be lower, such as the curve S" in figure 2. If this is so, the resource losses would be substantial, measured as the area between S and S" from the origin to the demand curve. We do not have enough information to properly identify this potential loss. As will be seen later, this potential loss would appear to be small or nonexistent. Finally, trade effects are not illustrated in figure 2. This is not because they are potentially unimportant. Rather, in both egg and broiler markets, when considering real resource costs, Canada appears to be approximately competitive in supplying the domestic market. Given the approximations of our data, trade effects appear to be too small to be significant.

Turning to measurement, the demand curve is assumed to have an elasticity at the farm gate of -0.225 (George and King). It represents something of a blend between the table egg and breaker-egg market, and the quantity in 1980, 488 million dozen, and the net producer price, $0.755/dozen correspond. This price is calculated as the average reported farm price ($0.79) less the "consumer subsidy" levy of $0.025/dozen and an export levy of $0.01/dozen, both in place to finance moving surplus table eggs to the breaker markets. It is assumed that no surplus eggs are destroyed, at additional cost, an assumption that has not always been accurate in the past. The supply curve is assumed to have unit elasticity, a compromise between the apparent ease of establishing additional chicken or egg "factories" and elasticities reported in Askari and Cummings between 0.2 and 0.5.

The positioning of the supply curve is quite another matter. There are no direct observations to use, given that at the margin of production we only know from the scarcity of quotas and tendency to produce in excess of quota limits that the net farm price exceeds the supply price. My attempts at estimating this supply price follow three lines, inference from data on the market for quotas, feed-cost rules of thumb, and U.S. price comparisons. Encouragingly, all measures are quite consistent, particularly for eggs.

The analysis of quota prices is quite complex, as befits a financial asset which is very much like a common stock. The problem is to determine the annual rental price, given the stock price. One must make assumptions about capital gains, opportunity costs of funds, the risk premium needed to compensate for uncertainty about policy changes, and any expectations of future allocations of new quota (gratis) to existing quota holders (Barichello, 1982). All of this assumes good data on the stock price of quota, an assumption whose accuracy is not clear.

However, from a partially filled matrix on quota prices across provinces and from 1975 to 1981, I am able to begin. The average quota price for eggs across Canada in 1980, reported, for example, in Arcus, is $12.65 per layer. An assumption of capital gains at the rate of 3 percent in real terms appears reasonable from the quota price data, and a private opportunity cost of capital in agriculture appears to average 6 percent (Jenkins). I have no direct observations on the risk premium that is felt necessary in this market but from discussions with poultry producers, it would seem at least as much as in the dairy industry, with which I am more familiar and about which I have some data. In milk, quota markets, the risk is seen to be sufficiently great that purchasers of this asset will discount its future returns at a rate equivalent to paying back principal plus interest in 4 years. Alternatively, an interest rate of almost 29 percent (in real terms) is used to discount an infinite stream of benefits.

Using this assumption for the poultry (egg and broiler) quotas, and assuming 20 dozen eggs per layer per year, the annual rent to egg quota is just over $0.14 per dozen ($14.35). This would be the distance AD in figure 2, and given 2 $0.005 dozen administrative levy (DC), the supply price of eggs in Canada, 1980, would be $0.5865¢/dozen.

A feed-price rule of thumb, gleaned from egg and broiler national cost of production formula, and from casual observation of industry experts, is that feed prices account for 60 to 65 percent of costs. For average feed prices, this results in egg costs between $0.573 and $0.621/dozen. However, casually calculated, this range does bracket the supply price derived from quota prices above.

Finally, an examination of U.S. prices can provide another point of comparison. As long as these prices are obtained without production regulation, and as long as the technology can move freely across the border, the U.S. price in the northern States, closest to Canada and Canadian conditions, should give a measure of potential costs in Canada. Taking both 1979 and 1980 data to smooth fluctuations, the average farm price in the northernmost States with significant (1 billion eggs sold) production is $0.509/dozen. At the 1980 exchange rate, this becomes $0.606/dozen in Canadian dollars.

All three measures are encouragingly similar, averaging some $0.591/dozen, and this will be taken as the Canadian supply price of eggs, point C in figure 2. Furthermore, these data suggest that U.S. costs are not significantly less than Canadian costs. Either the production restrictions imposed have a small effect on costs, or there are other cost advantages which offset the cost disadvantages of the restrictions.

To complete the data requirements of figure 2, we must know P_e and Q_e and from the above, P_e= $0.615 per dozen and Q_e=508.5 million dozen. Only one additional efficiency cost is added, and that is extra cost embodied in the feed-grain tariff. Counting this as part of Canadian agricultural policy, its removal would shift the supply curve to the right, as it turns out by one cent per dozen. Including this gives us our final estimates of P_e and Q_e, $0.58 per dozen and 509.7 million dozen, respectively.

The resulting economic effects are calculated. Producers gain the area P_oAEP_e less EBC, calculated net of the administrative levy and the extra feed cost of the feed-grain tariff, or $55.20 million. Consumers lose P_oABP_e, or $74.229 million. The difference is the social efficiency loss or $18.979 million. These numbers ignore any other tariff impacts, they ignore other economy-wide distortions, and the foreign-exchange benefit is seen as being too small to calculate, given the accuracy of our numbers. They also ignore to a large extent the social loss of resources used to preserve rents, and they ignore any monopoly rents or inefficiencies created or encouraged beyond the farm gate. They do account in some manner for most of the regulatory rules, and they do give some hint of the net export position Canada once had in eggs.

Broilers. The broiler market is analyzed in much the same way as that outlined above for eggs. One notable difference is in terms of Q in figure 2. In the broiler industry, production is limited to an amount less than that consumed, due to the allowance of a significant (some 6 percent of production) quantity of imported product. This means, in terms of figure 2, that the resource allocation loss of foregone production rents is somewhat larger than EBC, because the line EC is further to the left. Otherwise, the enumeration of efficiency losses and transfers follows exactly.

The demand elasticity is assumed to be -0.6 (George and King), the weighted average price to producers across Canada for 1980 is $0.423 per pound, and the quantity consumed is 913.164 million pounds (eviscerated meat basis, or 1,217.6 million pounds liveweight basis. The supply curve of chicken was assumed to have unit elasticity, as for eggs. Production of broiler chicken was 860.250 million pounds (1,147 million pounds liveweight), and a levy of $0.05 per pound was charged for the administration of the local (provincial) and national marketing boards.

The supply price calculations, using quota price data, began with an average quota price across Canada of $8.00 per bird space. Capital gains appeared to be somewhat less than for eggs, and a real rate of 2 percent real was assumed. A risk premium was added to the opportunity cost of capital as for eggs, resulting in a discount rate of 28.86 percent. Given an average of 4.55 production cycles per year and an average bird size of 4.08 pounds liveweight, this quota price data implied an annual quota cost (rent) of $0.115 per pound liveweight. Given a price of $0.423 per pound and a levy of $0.05 per pound, these quota rent calculations imply the farm cost of production (supply price) is $0.303 per pound in 1980.

Using a comparable feed-cost rule of thumb as for eggs (feed costs are 60-65 percent of total costs) we calculate the cost of chicken to be within the range of $0.3096-$0.3354 per pound (an average of $0.322 per pound). U.S. price comparisons from the northern states show an average 1980 farm price of $0.2899 per pound, or in Canadian dollars, $0.345 per pound.

These numbers are more variable than for eggs, but are still reasonably well bounded. A mean value from the three estimates, $0.32 per pound, was used as the supply price for chicken (point C in fig. 2). Finally, the feed-grain tariff increases the cost of producing chicken by $0.005 per pound. The net result is an equilibrium price, P_e, of $0.362 per pound and an equilibrium quantity of 1,323 million pounds liveweight.

From these numbers, the consumer cost is calculated as $73.18 million, the producer gain as $56.64 million, the gain by importers (right of first receivership assuming a landed cost equal to P_e, $0.36 Canadian) is $4.07 million, and the total efficiency loss is $13 million.

Despite their quite different administration, the supply management regimes in eggs and broilers have very similar effects as can be noted in table 3. The

Table 3--Economic effects of poultry industry regulation, farm-gate level, Canada

Economic gain	Barichello 1980	Arcus 1979	Veeman 1979	Harling and Thompson 1975-77
		Million dollars		
Eggs:				
Economy	-19	--	-0.4	-5
Producer	55	45	38	74
Consumer	-74	-56	-39	-80
Broilers:				
Economy	-13	--	-5	-11
Producer	57	71	71	94
Consumer	-73	-77	-76	-121
Importer	4	--	--	--

-- Not applicable.

main difference is the larger efficiency loss in eggs, due to the added administrative cost incurred in running the egg marketing regime. It is interesting to note that both schemes are still relatively expensive means of transferring income to producers. In eggs, $1.35 must be spent to transfer $1 to producers, a waste of $0.35 per dollar of transfer. This cost in broilers is $1.24, a waste of $0.24 per dollar of transfer.

Table 3 compares these results with those of regulated studies. All are generally similar, although Veeman's transfer estimates on eggs appear low, and Harling and Thompson's transfer estimates for broilers appear very high. One point worth noting is that the transfers imply that on average each egg and broiler farm gains by some $25,000. Although the grain sector featured a large transfer to producers in aggregate terms (seven times as large as the poultry-industry transfer), the benefit per farm is only about $5,000 or one-fifth the per farm benefit on poultry farms.

Dairy Industry. The dairy industry in Canada, like many around the world, is highly regulated, and like the poultry industries, output is controlled by quotas in a supply management regime. Unlike the poultry industry, the dairy industry accounts for significant number of farmers (about 1 in 6) and 15 percent of total cash receipts. This is even more true regionally, notable in Quebec where milk sales account for one-third of all farm cash

receipts, and Ontario where the figure is 20 percent. It also accounts for a large fraction of Government agricultural commodity expenditures and, as shall be seen, the largest total benefits from agricultural policy of any commodity group. Because fluid- and industrial-milk production involve different Government programs (Provincial and Federal jurisdictions, respectively) I will analyze them separately.

Fluid Milk. The rules in this sector are generally straightforward. Imports are prohibited, prices are administered, usually by formula, to maintain a price premium above industrial milk, quotas limit aggregate and individual farm production, and each Province is self-sufficient (except Newfoundland). These provincial fluid-milk regimes are clear examples of local monopolies with the advantage that excess production is channelled into industrial-milk markets, avoiding any surplus problems and keeping administrative costs low.

The diagram of figure 2, simplified to include only one supply curve, summarizes the fluid-milk market. The measures of gains and losses are the same as those outlined earlier. Because rules, prices, and quantities differ by Province, each one must be analyzed separately, involving too much detail to describe here. No trade effects are considered. The analysis here, notably for supply prices, continues the assumption of self-sufficiency in each Province. Therefore, the efficiency losses and transfers will definitely be understated. If the alternative was a program of purchasing constituents on the world market and reconstituting them in Canada, the numbers would be larger still. There are relatively few direct production restrictions embodied in fluid regulation, aside from health standards. Consequently there would seem to be fewer cases of regulation-induced supply curve shifts than in the poultry industries, except for the common possibility of reduced adoption of some innovations and related long-run efficiency issues. Rent-preserving activities are again neglected.

Brief mention should be made of the estimation of supply prices. The sole means of doing so was to draw inferences from quota price data. On the basis of quota price and allocation data by Province, expected capital gains in the value of one's quota stock was estimated by Province. A common opportunity cost of capital (6 percent in real terms) was assumed, and on the basis of data from British Columbia and Ontario, the risk premium required for investing in this risky asset was calculated to be some 22 percent (approximately a 4-year payback). The demand elasticity was assumed to be -0.35 and a supply elasticity of 1.0 was used. The producer gain was calculated with reference to quota levels (inclusive of some industrial milk) and the consumer loss was calculated with reference to actual consumption levels.

The results are shown in table 4. Partly due to the inelastic demand, the transfer of income from consumers to producers is large.

Table 4--Economic effects of fluid-milk regulation calculated by province in 1980 dollars at the farm gate, Canada

Economic gain	Amount
	Million dollars
Economy	-52.4
Producer	365.8
Consumer	-431.7

However, it is done with relatively little waste, as the cost of moving a dollar to milk producers is $1.14. This waste of $0.14 per dollar compares with $0.24 and $0.35 per dollar transferred in the broiler and egg industries, respectively.

Industrial Milk. Compared to fluid milk policy, regulation in Canada's industrial-milk market is complex indeed. It too features formula pricing with quotas to constrain output. Quotas are set at a level which preserves self-sufficiency for Canada in butterfat. The price of industrial milk is met by a direct subsidy plus support prices for the two milk constituents, butterfat and nonfat solids (skim). Given the quota level of production and the support prices chosen, there is a domestic surplus of nonfat solids. This must be exported to offshore markets, usually in the form of skim-milk powder and evaporated milk, and at world-market prices, substantial losses are incurred. These are largely financed with a series of levies on producers, although a longer term solution in more extreme situations would be some reduction in quotas. In addition, trade is strictly controlled. There is virtually an embargo on butter imports, and annual cheese imports are restricted to 45 million pounds, less than 5 percent of total industrial milk supply.

The analysis of this market is complicated by a lack of data. There is no direct information on the demand for industrial milk, only the demand for industrial milk products, and the supply side is obscured like the case in all

supply managed commodities. Figure 3 outlines the nature of the market. The demand for industrial milk, D, is measured as the vertical sum of the demand for its two joint products, butterfat and nonfat solids.

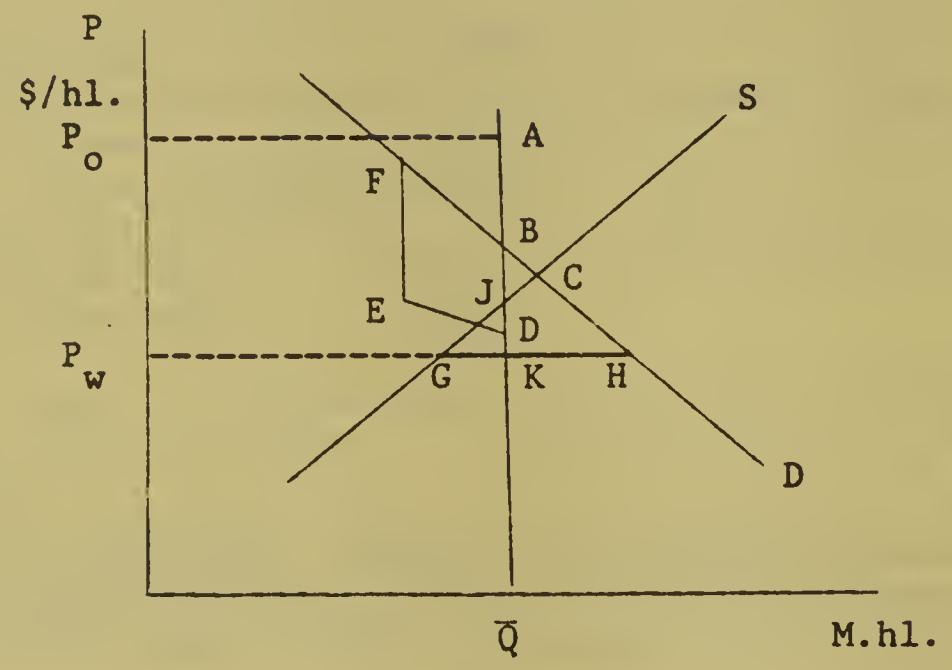

Fig. 3

We know one point on each of those two demand curves, the support price and accompanying domestic disappearance. The demand curve for nonfat solids is assumed to be -1.15 and for butterfat -1.40, implying a demand for industrial milk with elasticity -0.9. Arguments to support these assumptions are found in Barichello, 1981.

The supply curve is positioned from quota price data as previously discussed, using quota price data from Ontario and Quebec. An implicit rental for this quota in Ontario provides an additional source of evidence to give increased confidence to supply price estimates. The supply elasticity is assumed again to be unit elastic.

Finally, the world price is calculated to consider the costs of restricting this trade. However, if Canada entered that market on such a scale, with the marginal supplier being New Zealand, it would surely have some effect on the world price. Assuming an excess supply elasticity from New Zealand of a least 0.75, and iterating for different world prices until an equilibrium is reached, we find that Canada would bid up the world price by 38.6 percent, given the elasticities assumed and the 1978-80 average world prices for butter and skim-milk powder.

These procedures give the following values to the lettered points in figure 3:

A = $32.76 per hectoliter, 46 million hectoliters;
B = $24.96, 46;
C = $23.75, 46;
D = $19.22, 46;
E = $21.61, 35;
F = $31.43, 35;
G = $17.63, 35.6;
H = $17.63, 58.65;
J = $22.75, 46.

The welfare costs have 4 components. First, the export of surplus skim-milk products at world prices denies the Canadian market of the consumer surplus in area FBDE, $85.6 million. Compared to the world price, P_w, excess production resources are used, a loss illustrated by triangle JKG, $26.6 million. Again, compared to world prices, consumer surplus is lost, measured by area BHK, or $46.4 million. Offsetting these costs is a benefit of additional foreign-exchange earnings (savings), worth $28.4 million. The net social efficiency loss is $161.8 million. If one ignores the trade side, the net efficiency loss is still sizeable, $117.3 million.

The producer gain is measured as P_oAJGP_w, less the overlap with the fluid markets, or $628.7 million. The consumer loss is estimated directly from the butterfat and nonfat solids demand curves, measuring the surplus in moving from 1980 support prices to world prices, a total loss of $548.1 million. Finally, taxpayers also have an important interest in this policy, as they suffer a loss of $303 million.

These results are combined with the fluid-market results in table 5, where comparisons with Josling's results are made. The results are quite comparable, even more so since the Economic Council Studies were completed, due largely to evaluating the fluid-milk programs Province by Province as was reported above in table 4. Two interesting calculations can be made from this table. First, the cost of transferring a dollar to producers is some $1.22.

Table 5--Economic effects of fluid-milk regulation, farm gate level, Canada

Economic gain	Barichello 1980 $	Josling 1978/79
	Million dollars	
Economy	-214	-275
Producer	995	905
Consumer	-980	-623
Taxpayer	-303	--

-- Not applicable.

This waste of $0.22 is the average of $0.26 in the industrial milk program and $0.14 in fluid-milk policy. Despite the absolute size of these numbers, this transfer is still made with less waste than in the two poultry programs. Furthermore, the per farm benefits are lower.

The dairy program producer benefits, although $1 billion annually, average about $20,000 per farm, 80 percent of comparable figures in the poultry industry.

Conclusions

This variety of measurements can best be seen in summary form in table 6. The large numbers due to the dairy program are immediately striking, but on a per

Table 6--Summary of economic effects of selected Canadian agricultural policies

Item	Economic gains			
	Economy	Producer	Consumer	Taxpayer
	Million dollars			
Wheat	tr*	470	0	-307
Barley	-3	246	0	-160
Rapeseed	tr*	70	0	-49
Eggs	-19	55	-74	--
Broilers	-13	57	-73	--
Dairy	-214	995	-980	-303

-- Not applicable.
* tr = less than $1 million.

farm basis, the poultry industry producer transfers are larger, and the cost to the economy is proportionately greater (per dollar of transfer). Also of importance is the potential size of unmeasured efficiency losses in the grain and oilseeds sector, notable with respect to the delivery quota and rail transportation system.

In all, these numbers provide useful information in the assessment of Government policy. This sample of agricultural policies is far from benign in its effects and the transfers are clearly important. And, these effects differ widely by sector, making generalizations difficult. But, it is important to note that these numbers must be viewed and interpreted with caution. A number of important parameters were assumed and a variety of errors, certainly omissions, must remain. Even so, the estimates are generally quite robust across different studies and assumptions. As rough guides to the effects of agricultural policy they are probably helpful, and they certainly point the way to additional productive work.

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GOVERNMENT POLICY IN SUPPORT OF DOMESTIC AGRICULTURE: COSTS AND BENEFITS

The European Community

Michel Petit

Two quotations from Corden (1974) express well opinions widely held among economists belonging to the broad neoclassical tradition about European agricultural policy, particularly the Common Agricultural Policy (CAP) of the European Economic Community (EEC).

It is protectionist: "Historically, one of the main reasons for the imposition of protective tariffs in the now-advanced countries has been to prevent changes in internal income distribution that would otherwise have taken place as a result of market forces."

It is outdated and should be revised: "The two outstanding cases (of the senescent industry argument) are the protection of continental European agriculture since the late nineteenth century and the worldwide protection of the textile industry in recent years."

In this perspective it is legitimate to ask: how was such a policy orientation chosen and maintained since the latter 19th century? And, what are the implications of such a choice, particularly what are the costs associated with this policy? These are the questions, which as I understand, the organizers of the workshop have addressed to me. I have been asked to concentrate on the domestic aspects, since other contributors will discuss the international, trade and aid issues raised by EEC agricultural policies. But, the decision to protect European agriculture has been a strategic choice which has dominated all other aspects of domestic agricultural policies. Thus, I interpret my task as assessing the domestic implications, and particularly the domestic costs, of this general, agricultural policy orientation.

As I have reservations with the concept of cost applied to policy analysis, the thrust of my paper will be devoted, first, to a restatement of the problem which leads economists to elaborate analyses in terms of costs. Thereby, I hope to show the limits of the concept of cost applied to policy analysis. Then, I attempt to derive and to compare the various implications of possible changes in current policies. It may then be appropriate to speak in terms of cost, and, thus, to show how the concept can be useful in shedding light on policy choices.

Restating the problem will imply, first, a sketch of the historical background in which policies were elaborated and evolved, and, second, a brief description of the essential features of these policies. These two tasks will be undertaken in the first and second part of this paper before turning, in the third part, to the discussion in terms of costs.

Historical Background

European agricultural policy has a long history. It is essential to take this history into account if one wants to understand the current setting. A key period was the 1870's and 1880's when European countries reacted differently to the competition resulting from progress in transportation techniques which brought grains from new countries of North and South America and from Russia at prices well-below levels deemed acceptable for European producers. Policy

orientations decided at that time have had a long-lasting influence. One has to wait until the fifties and sixties, when the European Common Market was established, to witness another turning point of potentially the same historical importance. As is well known, some countries chose to protect their agriculture, such is the case of Germany and France. Others chose to keep their frontiers open, the best known example, and probably the most extreme one as well, of that orientation is the United Kingdom (UK). Other countries such as Denmark and the Netherlands followed suit. The United Kingdom appears to have totally sacrificed its agriculture at that time 1/, whereas Denmark and the Netherlands purposively increased their cereal imports in order to feed a considerably expanded livestock population. It is, of course, well beyond the scope of this paper--and beyond the competence of this writer--to review historical developments in the 10 countries, presently members of the EEC. But, for our purpose here it will probably be sufficient to review the main developments in France, Germany, and the United Kingdom. These three sharply contrasting cases cover a wide range of problems which continue to weigh.

France. Most observers agree that the decisive choice in favor of agricultural protectionism was made in the late 1870's in order to secure an alliance between the peasants and the bourgeoisie against the workers (8). It must be remembered that just after the Franco-Prussian War, the Commune of Paris uprising--the fourth attempt at revolution in less than a century--was bloodily crushed. Fighting the socialist ideas was to be, for the next decades, a constant objective and an essential task of the dominant social groups and of the successive governments.

In this perspective, the first role of agricultural policy was ideological. In order to ensure social peace, private property ownership by small farm operators was viewed as critical. Their ruin would have been seen as a socio-political catastrophe; a major migration out of agriculture could only have swollen the ranks of the troublesome and feared urban proletariat. Political stability rested on an electoral system heavily biased in favor of the rural areas. In addition to protection from outside competition, the implicit social compact provided farm operators with a liberation from the old exploitative economic and social relationships in which they were involved.

Accordingly, cooperative and mutual credit institutions were encouraged to fight the local monopoly power of merchants; primary education was made mandatory to reduce the influence of the royalist clergy, and efforts were made to promote technical progress in agriculture. Because the latter were not successful, the protectionist policy was strongly criticized by, among others (1), who accused protectionism of having fossilized an antiquated structure. He felt that many small peasant farms incapable of adapting to modern techniques had survived, at the expense of the general economy and of

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1/ Kirk (16) reports that the President of the Board of Agriculture is said to have remarked (in about 1908): "The business of the Board is to preside over the demise of British agriculture, and to make sure that it gets a decent funeral." Whether this was actually said or not does not matter much here. The mere fact that it is plausible is itself very revealing.

the peasants themselves, who were the victims of too interested protectors, eager to keep their own dominating role. But such a point of view, even though it was widely shared during the expansionist period of the fifties and sixties, is probably much too simplistic.

Ruttan, in a short but very perceptive article, has emphasized that the technical stagnation of French agriculture and the relatively high proportion of the working population kept in that sector until World War II could very well be explained by the sluggish consumer demand related to the demographic stagnation and the modest rate of industrial growth. Gervais and Tavernier (8) have emphasized additional factors which must be taken into account if one is to fully understand the logic behind the policy orientation chosen in the latter 19th century. The savings function performed by the farmers and the level of protection provided by the Meline Tariff of 1892 was not very high. It is indeed particularly significant that agriculture was a net supplier of financial resources to the rest of the economy. Thus, agricultural policy appears, during that period, as the result of a difficult compromise among many diverse objectives, of both a political and an economic nature. Contrary to the naive liberal doctrine, it is not certain that agricultural protection over more than 60 years led to a serious misallocation of resources. Undoubtedly it would have been possible to produce more, with a more widespread use of modern techniques. But, was there a market for such increased production? How much capital would this have required? Where would the labor thus liberated have gone? What would have been the social and political "costs" of such a change in policy?

After World War II, economic conditions changed drastically; the general policy orientation was seriously shifted, even if protectionism remained a major feature of the new policy. With the needs of, first, reconstruction and, then, general economic growth, agricultural production was encouraged, technical progress was promoted, credit developed. The demand for labor in industry and other sectors accelerated the movement of people out of agriculture, and this, as well as farm consolidation, was supported by various structural policies. It is true that soon farm surpluses occurred. Thus Government intervention on domestic markets, which had started for wheat in 1936, was expanded to several products, such as other grains, meat, milk, and fruits. Again, it was deemed necessary to protect farmers first from market instability and, soon, also from the general tendency of agriculture to over supply--the famous treadmill of Cochrane. The order of the day was not a restoration of free international trade for agricultural products; and the sad experience of the United Kingdom during the war did not render such a proposition very attractive either.

United Kingdom. As Kirk has emphasized, the situation in the late 19th century was unique (16). The severe fall in grain prices, which occurred in 1873, and which was not followed by a recovery as the general economic depression wore off, did not lead to a major policy decision. In a way it can be argued that the case for free trade had been decisively won earlier with the repeal of the Corn Law. Nevertheless, it must be recognized that whatever was decided, or not decided, was so done in the teeth of the farming interest in the Lower House of Parliament, and of the even stronger landlord interest in the House of Lords. A more powerful interest prevailed. This was the interest of the industrial urban population in cheap food, and its evident intention--made manifest at more than one general election--of furthering that interest by its voting power. For the same author this laissez-faire attitude essentially ended however with World War I.

The Corn Production Act (1917) provided high prices for cereals, supported by Government grants. This support continued until 1921 when the Act was repealed. This, of course, was a reduction in the degree of protection and was viewed as a "betrayal" by farmers. But, it did not signal the end of Government intervention in agriculture. Support to sugarbeets was introduced in 1924, an Agricultural Credits Act was passed in 1923, and agricultural wages were regulated in 1924. Rural infrastructure (roads, electricity, and public water) was developed earlier than in other European countries and this certainly favored the later development of milk production.

The crisis of the thirties led, in spite of considerable ideological opposition 2/, to a growing degree of Government intervention: promotion of collective market power by farmers through "agricultural marketing schemes" and quantitative regulation of imports through negotiations with supplying countries by the Market Supply Committee. This pragmatic device had the advantage of permitting liberal terms to the Dominions, in line with the "imperial preference," and harder ones for a country such as Denmark. For wheat a levy-subsidy system was introduced to support prices near a target level. All these measures set the stage for a major achievement of British agriculture during World War II. It managed to provide the population with enough food to survive and fight the war. It is true that large quantities were imported, but, in 6 years, the domestic food production, measured in calories, almost doubled, thanks in particular to a major shift from animal to vegetable products. It is not surprising that after such a performance, administered by a Government working in close collaboration with farmers' representatives, the leading farm organization, the National Farmers Union, emerged as a powerful pressure group. Thus, farmers were able to avoid the "betrayal" they had faced after World War I when the Corn Production Act was repealed. As reported by Tracy, the "Labor Government passed the Agriculture Act in 1947, and undertook to buy at fixed prices the whole domestic output of grains, potatoes, sugar beets and fatstock. The Conservative Government which returned to power in 1951 changed the method, dismantling food controls and substituting deficiency payments, but maintained the aims." 3/

Concern with the cost of such support, which was continuously growing as domestic production expanded and world prices declined in real terms, was permanent, and the case for support to agriculture always questioned by economists. In 1961, the Minister of Agriculture stated that the system of support would have to be changed whether or not the United Kingdom joined the European Community. Under such pressure, the position of agriculture regressed constantly. In spite of the Annual Price Reviews, "farm prices were on the whole held down in the U.K. by successive Governments: between 1956 and 1970, the overall agricultural price index rose only 10 percent, while the retail price index (all commodities) rose 65 percent." 4/ After having peaked at 340 million pounds in 1961, the cost of support never exceeded 300 million after 1964.

Germany. The protectionist choice was also very much the result of the particular political situation. The movement toward German unity had been favored by the establishment of a German customs union, the "Zollverein" in 1834. Tariffs on grain were lifted in 1865. But, German producers lost their British export market, and the trend toward free trade was reversed by the

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2/ Kirk writes of an "ideology of financial rectitude" (16, p. 16).

3/ (23), p. 10.

4/ The agricultural price crisis of the last quarter of the 19th century had been overcome.

Tariff Acts of 1989-80. As explained by Cecil (1979), this "brought both heavy industry and the great estates into line behind Bismark. The effect was to affirm the political power of the Junkers, as well as to preserve a substantial agricultural sector within the economy." Forging the alliance between "rye and iron" Bismark was thus able to fight the socialists of the Social Democratic Party (SPD) who took more to heart the interests of the urban masses than those of the peasants, who were assumed to disappear soon into the ranks of the urban proletariat. 5/ The establishment of a Federal tariff had the added advantage of providing the "Reich" with much needed finance as German unity was not yet very solid. When he replaced Bismark as chancellor, Caprivi had to renegotiate the expiring trade agreements. He maintained the industrial tariffs, but in an effort to appease trading partners he made concessions on agricultural duties. This led to opposition from farmers who got organized in the "Bund der Landwirte--BdL," this organization was instrumental in bringing about the fall of Caprivi in 1894. Eight years later when the treaties negotiated by Caprivi expired, Bulow, who was then chancellor, was eager to cement the alliance between heavy industry and the great estates in order to get the solid political support of the Conservative and National-Liberal Parties. Duties were then increased and extended to cover livestock products. Domestic agricultural prices increased significantly: for instance, "the average price of German wheat over the period 1891-1910 was RM 17.60 per 100 kilos; the equivalent free market price in London was 12.90."

But, in 1914, Germany imported large quantities of food and fodder, particularly barley and maize, from Russia. During the war, food supplies declined drastically because of the blockade and declines in domestic yields. By the end of the 1916-17 winter, the daily diet of many was only about 1,000 calories. This had a major impact on the collective mentality regarding agricultural affairs. Food security became a major policy objective and this lasted for at least half a century. This concern may still be alive today. After the war agricultural reconstruction proceeded fairly rapidly. Prices were fairly stable until 1924 but they fell afterwards. In 1925, the rightist coalition in power reestablished tariffs against the opposition of the SPD, which continued to defend only the interests of urban workers. Most economists were then in favor of free trade (16).

Continued price declines stirred up peasant agitation in the late twenties, leading to the establishment of a "Green Front" and the adoption of flexible tariffs in 1929. Surpluses, particularly of rye, accumulated, which led to further Government intervention, this time on the domestic market. These measures did not suffice, given the sluggish demand resulting from the general economic crisis. As a result, the Nazis, in the thirties, easily succeeded in securing the peasants' support as they appeared to take the bull by the horns, cutting off German agriculture from the outside world. This was in line both with the preparation of the war, which required food self-sufficiency, and with the Nazi ideology giving the peasant an essential role in maintaining the purity of the "Nordic race." In the same perspective, support was given to small family farms in the form of debt repayment and security of tenure. According to Cecil: "By 1938 impressive results were being registered; the country was self-sufficient in bread grains. Evidently the price paid by

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5/ It is precisely the failure of this prediction which led Kautsky to his masterful study of the "agrarian question" (15).

farmers, in terms of subordination to a powerful bureaucracy, was a high one but they could feel that they had regained a place of respect in the community and would not again be left at the mercy of harsh economic forces." This success of the Nazi Government had a lasting impact after the war. The new regime could not have afforded to bear the same negative image as the Weimar Republic. Support to peasants has continued.

The main impact of World War II on future agricultural policy was to strengthen the concern for security of food supply in the public-at-large and among politicians. The sense of urgency was greater after the war as partition had in effect cutoff the western zones, which formed the Federal Republic, from its traditional eastern supplies. This and the tensions of the cold war probably explain the decision to heavily protect domestic agriculture from free-market forces. With industrial and general economic growth, the standard of living in the population-at-large increased rapidly, and, thus, farmers continued to appear relatively disadvantaged and deserving special treatment. It is true that economists have argued for a long time that it would be more efficient to promote structural changes in order to make agriculture competitive. Indeed they had an influence in the national debate, which produced the famous agricultural law in 1955; measures to increase the size of holdings were taken and had a positive impact. But, these were not a substitute for high prices, as appeared clearly when prices were to be harmonized with those of neighboring countries in order to set up a European Common Market.

Historical Lessons

This brief review of the historical developments of agricultural policies in France, the U.K., and Germany should be sufficient to illustrate several points which were very influential in the debates about the establishment of the CAP almost 20 years ago, about the admission of Britain 10 years ago, and about the maintenance or the reform of the CAP today:

- Government intervention is general and pervasive; its legitimacy is not questioned by any significant segment of society. It is widely accepted that the farm sector should not be left to free-market economic forces. In this regard, it should perhaps be stressed that interventions actually affect many domains, much more numerous than those which have been touched upon in this paper.

- The degree of protection from world markets has varied in time and space. Historically, France and Germany have been much more insulated than the U.K. These three examples suggest that the degree of protection depends upon the economic, social, and political place of farmers in society. But, in all three countries the extreme diversity of farmers' situations does not seem to have had a significant impact on domestic price and market policies.

The Common Agricultural Policy

As Pompidou, then Prime Minister of France, explained clearly in 1965 in an interview to Le Monde: "The Rome Treaty, as it had been conceived actually created only an industrial common market. But such a common market put French industry in direct competition with the outside, particularly with the powerful German industry. It was acceptable only if it was offset by an agricultural Common Market providing our agriculture with important outlets at

remunerative prices thus permitting the Government, unburdened of the necessity to support agriculture, to diminish the costs born by industry." This candid statement of the French position was never questioned. It was essentially accepted by France's most powerful new partner, as the German Government soon imposed, at great political risk, to its farmers the principle of common European prices, which meant a reduction of German prices. This particular treatment of agriculture led to the paradoxical situation where agricultural policy became the most important element of Community affairs. Thus, debates about agriculture have in a way become the testing ground for Europeanism, a situation which has probably helped to maintain the principles of the CAP but which in the long run may be damaging both to agriculture and to the European ideal. Before drawing the implications of this situation for our analysis in terms of costs, it is, however, necessary to recall briefly the main features of the CAP and to point out the elements which remain under national control.

Common Features. Numerous descriptions of the CAP are available.6/ Thus, only the essential elements will be briefly recalled here. The first objective was to achieve a common market for agricultural products. This objective is to be related to the general objectives of the Treaty of Rome: to achieve the union of the people of Europe, to increase the standard of living of all Europeans, and to promote the accelerated development of the poorest regions.

More specifically, the famous Article 39 of the treaty spells out the following objectives for agricultural policy:

a. Increase agricultural productivity through technical progress and the promotion of an optimal use of resources, particularly labor;
b. Ensure an equitable standard of living to the agricultural population, in particular by an increase of the income of those who work in agriculture;
c. Stabilize markets;
d. Guarantee the security of supply;
e. Ensure reasonable prices to consumers.

Of course the world has changed since 1958; new objectives, concerning for instance the protection of the environment, the welfare of the consumers, or regional development, would occupy a more prominent place if the treaty was rewritten today. However, it is important to keep in mind the objectives pursued by a policy when one assesses its costs. We will come back to this later.

Price and Market Policy. The establishment of a common market led directly to a price and market policy, which was supplemented only about 10 years later by a structural policy. The pursuit of the objectives spelled out in Article 39 was undertaken through the adoption of three principles guiding the elaboration of market intervention mechanisms suited to every category of products:

a. Unicity of the market, that is, creation of a single domestic market in which each national market, for example, the French or the Dutch market, is a regional one, as, for instance, the California market in

6/ See as an example (14).

the United States. This means that Community institutions alone are responsible for the day-to-day management of policy instruments.

b. Community preference, that is, market intervention mechanisms, must be such that for the same product all buyers within the Community are incited to satisfy their needs from within the Community rather than from outside.

c. Common financial responsibility, that is, the intervention costs, are supported by the Community as a whole. This has been achieved through the creation of a common fund, best known by its French acronym, FEOGA. Accordingly, levies collected in Rotterdam, Rouen, Hamburg, or Liverpool go into FEOGA, even if they go through the Dutch, French, German, or British Treasury.

The specifics of the intervention mechanisms vary from one category of products to another, and this has important consequences as it leads to great variations in the degree of protection. But, since this section is devoted to common features, it is sufficient to concentrate here on the similarities rather than on the differences among products.

For all products which have the benefit of an intervention, the Community, through its Council of Ministers, fixes a target or indicative price every year. From this level are derived both an intervention price, (that is, a price level such that if the market price falls below it, intervention buying by official intervention agencies becomes mandatory), and a threshold price (that is, a price level where if the world-market is below it, the difference between the two levels is collected as a levy on imports and paid as a subsidy to exporters, called a "restitution" . This "variable levy-restitution" scheme applies directly to cereals, and indirectly to poultry and pork. It is often and, rather justly, taken as the basic structure of the CAP market-intervention mechanisms. Actually, the instruments used are extremely numerous and diverse: Oilseeds are subsidized; sugarbeets have the benefit of a price-support scheme, but within three types of quotas; milk has the added feature of a coresponsibility levy on producers; durum wheat has a deficiency-payment scheme; cut flowers are protected only through a customs duty.

In spite of this diversity of policy instruments, the respect of the three principles led to the establishment of a truly common market. It is probably of historical significance that this major objective was reached in less than 10 years. The first proposals were officially put forth by the Commission on June 30, 1960, and all major agricultural markets were unified by the summer of 1968, while the customs union was achieved on July 1, 1968. Soon, however, the invention of the Monetary Compensatory Amounts (MCA's) dealt a very serious blow to this achievement, as we will see in more detail below.

One result of the diversity of market-intervention measures is that, if the degree of protection from the world market is high for some products, it is at the same time quite low for others. This has led to considerable debate within Europe and also with its trading partners, as exemplified in the various rounds of trade negotiations in the GATT. It has also led to significant domestic-market stability and to large surpluses for some products, particularly cereals and dairy, and, consequently, contributed to world-market instability.

Structural Policies

Price support policies have long been criticized as inefficient and inequitable. They are not equitable because they provide the largest income support to the largest, that is, the richest, producers. They are not efficient because they slow down the necessary adjustment in farm structure which would bring about a better allocation of resources. We shall discuss below the limits of these arguments but they are sufficient for our present purpose, as they provide the theoretical basis of the structural policies to be discussed here.

The debate about the most efficient farm structure has a long history and is still open today. Numerous authors have believed that industrialization was the keyword characterizing the transformation of agriculture. The brief historical sketch presented above has only alluded to some of the debates and policy measures regarding agricultural structure in the three countries reviewed. In France, the Gaullist Government brought about a major change in agricultural policy emphasis. The price-escalation-with-inflation mechanism was abandoned and the passing of the Agricultural Orientation Act of 1960 and the Complementary Act of 1962 launched major structural programs promoting the early retirement of old farmers, the migration and training for nonagricultural jobs of farmers or of their children willing to leave agriculture, and the establishment of institutions intervening on the land market to facilitate farm consolidation. But, at the Community level, the structural question had not really been publicly discussed before the spectacular presentation of the famous "Mansholt Plan" in 1968. This candid presentation of a policy designed to shrink the agricultural sector, in terms of production, labor employed, and land use, faced a tremendous public outcry. Farmers were in an uproar and many politicians were upset with Mansholt for saying publicly what everybody knew but would not admit. In addition, the accelerated rhythm of change, which was thus suggested, was deemed socially unacceptable and therefore politically infeasible. Thus, it is not surprising that the plan was not adopted but that a few years later a watered-down version of the same ideas was embodied in the so-called structural directives which constitute the essential structural component of the CAP.

As emphasized by Fennell (7), the corresponding measures, financed out of the Guidance Section of FEOGA, are more flexible than the market regulations presented above. They leave a wider margin of maneuver to national governments for their application. In addition, they provide only partial financing, the balance being met by the national government and, also, even the recipient farmer. Two measures stem directly from the spirit of the Mansholt Plan: The aid to farm modernization (directive 72/159) and the early retirement scheme (directive 72/160). The former essentially provides farmers, satisfying specific conditions, with investment aid, mainly subsidized credit. The latter provides older farmers, willing to retire and to let their land serve for farm consolidation, with monetary incentives. In several countries this early retirement scheme works as a supplement or, sometimes, a substitute to similar national programs which existed earlier. Elsewhere it does not seem to have had a very great impact. The former, which is much more selective in terms of its target group, has had an impact on the distribution of subsidized credit. Paradoxically, it has often had, as a consequence, an increase in milk production, already a surplus commodity in the EEC. This results from the eligibility criteria. Farmers must elaborate a development plan. They are eligible for help if, at the beginning of the

plan, their labor income is less than a regional reference, and if it can be reasonably anticipated that at the end of the plan it will be at least equal to that reference. In many instances, only dairy farmers who are considerably expanding their enterprises will meet these criteria. In addition, these farmers must meet some minimum requirements in terms of level of agricultural education, and they must keep farm accounts of a standard type.

There are many other measures aiming at the general uplift of poorly skilled farmers or at the support of farmers in various types of situations. Most of these measures are applicable either for specific products, such as wine, or in special regions. Such is the case for the measures in support of mountain and hill farming. On the whole, these specific measures have been agreed upon by the Council of Ministers, in a very ad hoc fashion, as part of a global deal in one annual price-fixing negotiation or another. The expression "the Mediterranean package" used a few years ago in Brussels is very revealing in this respect.

The pejorative tone of these comments should not, however, be taken as derogatory. These measures reflect the nature of the Community decisionmaking process. As a result, is it conceivable that an added emphasis on "integrated regional development," as apparently contemplated at the present time in at least some circles of the Commission, may be a politically feasible way out of the current situation where agricultural market support eats up about 70 percent of the total Community budget.

The Movement Towards Renationalization

As the CAP has mainly been a market policy and as government intervention has touched for many decades, in all countries, a great array of domains, it is clear that the CAP has only been one, albeit important, aspect of agricultural policies within the EEC. As to other policies affecting long-term adjustments of agriculture to changes in economic and social conditions, we will touch upon them here. But, another element of national variation stems from the exceptions, begun as early as 1969--the year following the completion of the common market--to the principle of unicity of price.

Policies Influencing Long-Term Adjustments. The fact that various national governments have pursued for many years specific structural policies was already mentioned. In addition, emphasis should be placed on the various policies regarding the promotion of knowledge and technology. Strangely enough, these policies, which are more and more recognized as critical for the agricultural development of less developed countries (LDCs), have received very little attention in Community debates. Yet, the range of policies in this general area is very wide and their possible long-term impact significant. Twenty or thirty years ago cane sugar appeared much more economical to produce than beet sugar; thanks to differential rates of technical progress, this is much less obvious today.

The range of these policies cover initial education, continuing education, and research. In all these areas the national differences are very great, so much so that it is even very difficult to assess them. The Community has attempted to launch a program of cooperation in agricultural research. But, even though this is an area of obvious common interest, not much has been achieved for lack of sufficient funds but, also, perhaps, because the agricultural research institutions in member countries are very diverse. In the fields of extension

and promotion of technical progress, national authorities spend large amounts of money in very diverse forms and probably with very unequal effectiveness at the national as well as regional levels.

Other important domains of intervention include infrastructural public investments, investment support to farmers, and help to marketing organizations. About these we know that they are also important and diverse; but the truth of the matter is that, to this writer's knowledge at least, there is no publication that systematically describes and compares these measures, not to speak of any comprehensive analysis of their impact on agriculture in the various countries.

The Monetary Compensatory Amounts (MCA's). To recall briefly, in 1969 when the French franc was devalued and a few months later the Mark revalued, the respective Governments decided that they could not respect the principle of the common price for agricultural products, expressed in the common unit of account. The reason was inflation, which would follow the devaluation, and the interest of the German farmers who would have had to accept a reduction of the prices expressed in marks, that is, the prices which they received. It was felt that temporary levies and subsidies would permit countries to weather the monetary storm. Thus, the famous MCAs and "green currencies" were born.

Actually the successive devaluations and revaluations have been such that MCAs have ever since constituted a quasi-permanent feature of the European agricultural scene. This means that there is not one single price and that farmers in strong currency countries have had a competitive advantage over their colleagues in weaker countries (19).

The decision process regarding each country's MCAs has been such that a great degree of flexibility is kept by each national government. Thus, as argued by many authors (11, 21, 22), the decisions regarding agricultural price levels have been, to a great extent, renationalized. Whether this is to be regretted or not is a question on which economists differ. Ironically, for those who advocate the objective neutrality of the social scientists, one cannot but be struck by the fact that French economists lament this breach in one supposedly fundamental principle of the CAP, whereas German and British economists admire the MCA system because it is flexible and "remarkably well suited" to meeting the requirements arising out of "the great disparities between member states in terms of economic performance and farm structure" (11).

The establishment of a European common market for agriculture in the sixties was undoubtedly a great achievement of historical significance. But it has not been possible to develop a full-fledged, comprehensive agricultural full-fledged, policy. The structural component is still very weak and, more importantly, many policies affecting the long-term evolution of agriculture remain within the sphere of national decisions. In addition, the introduction and the performance of the MCAs has given back to national governments a great degree of freedom in decisions regarding the domestic level of agricultural prices. These developments may be interpreted as reflecting deep divergences of view among member countries regarding the long-term future of their agricultures and the policies needed to bring about the necessary adjustments. In this perspective the well-known annual disputes regarding agricultural prices and budget contributions could be taken as other illustrations of these divergences. It is against this background that we can come at last to the main topic of this paper; the question of policy costs.

Policy Costs

Concepts and Approaches. A commonly accepted definition of policy costs is implied by the following quotation: "Certainly it is not difficult to show that the CAP makes economic nonsense, in that there are alternative policies which could yield efficiency gains relative to the existing policy, but which need not involve any deterioration in the extent to which the policy achieves what usually regarded as its major objectives" (19). Furthermore, the present policy costs more than alternative policies would; without sacrificing any major objective it would be possible to achieve efficiency gains, that is, to save costs. In the same paper Ritson cogently argues that this situation can easily be explained if one recognizes that the Community policy decisionmaking process does not operate as a search for the optimum of a Community welfare function, but it is the result of a compromise among national governments seeking to maximize their gains and minimize their losses. This view has led to a surge of interest, particularly in the United Kingdom, for the question of the benefits and costs of EEC membership. Precisely such is the title of a workshop which was held at Wye College in 1979. In the first sentence of the first paper of the workshop, Reid emphasized: "The cost of membership of the European Community has in recent months become a highly political topic" (25). This is particularly true in the United Kingdom and has led the British Government to insist that its contribution to the Community budget be diminished. One may wonder whether or not this particular point of view on policy costs has not unduly attracted the economists' attention and excluded other aspects which are also very important for policy analysis.7/ But, assessing all the transfers among countries resulting from a given policy is already very difficult. An effort to simplify the problem has been presented by Godley, of the Cambridge Economic Policy Group, which has done influential work on the cost for the United Kingdom of EEC membership (19).

Godley writes, "In this paper we are not discussing the so-called 'direct' costs to Britains of EEC membership in which comparison is being made with a hypothetical position in which we are not members. What we are doing is examining how the present system of financial transfers between member countries is working...that is, examining the patterns of transfers." The objective appears straightforward and useful but, as explained on the next page, the financial effects ("in principle quite easy to calculate") fall in two categories: the net cash payment to the Community Budget and "the costs incurred by countries which import food for the rest of the Community at prices higher than they would otherwise have to pay"(9). In other words, a reference situation has to be defined as a basis for comparison. In her review of the workshop, Loseby (18) emphasizes this point: "Numerous methodological difficulties were encountered, which can probably be reduced to the basic problem of defining a reference situation against which to measure the effects of the CAP."

7/ Having pleaded elsewhere for the development of an "analytical political economy" (20), I do not want to imply here that political considerations can be excluded from economic analysis. My point is that they should not blind the analysts or completely distort the conception of the tasks which they have to perform.

The fundamental problem encountered in calculating national costs and benefits was very well described by Koester during the same Wye workshop: "Estimation of the cost of the CAP to member countries is virtually impossible without making strong value judgments. If costs are defined as opportunity costs, the identification of positive costs indicates that the nation would be better off with a different policy. Such a statement could only be established if the objective function for that society was known and the alternative policy (the reference system) must be acceptable in every respect; that is, politically, socially, and administratively"(17).

The purpose of these comments is to emphasize that economists must not forget the limitations of the hypotheses which they accept implicitly or explicitly. But, this does not imply that the exercise of calculating national costs is useless. Researchers have identified four types of costs: the net budget costs, balance of payments costs, costs to consumers in the form of higher prices, and the effect on total real income in different member states. But, these do not really capture the changes in the welfare of consumers, producers, and taxpayers arising from policy changes, which must, of course, be included in a comprehensive assessment of policy costs. As explained by Buckwell and others, "The political debate of the last two years has focused almost entirely on the net budgetary costs to particular member states. This ignores the cost to consumers throughout the Community who pay more for their food than they might do under a different policy. It also ignores the cost of the misallocation of resources resulting from the over-expansion of agricultural output. Within the neoclassical economics tradition these welfare impacts are approached through the Marshallian concept of producers' and consumers' surpluses. For agricultural policy, this approach was first used in the field of international trade to estimate the welfare cost of protection (5, 6). Following this lead, Josling has proposed a comprehensive conceptual framework "to examine the relative efficiency of several alternative methods of price support for agricultural commodities" (13). The link with international trade is direct, as he stresses in a footnote that his analysis refers only to goods competing with imports. Recently, Buckwell and others have followed this approach to measure the costs of the CAP.

Here again, the theoretical limits of the approach should not be overlooked. It does permit us to define total costs and to derive unit average and marginal costs. Thus, it provides criteria to judge the relative efficiency of various policies. But, it is subject to the fundamental limitations of the Marshallian concept of surplus. First, as indicated by Boulding, "it is perhaps better to call it the buyer's surplus; the corresponding concept for sellers may be called 'sellers' surplus"(2). But, the most important limit of the concept, as used for policy analysis in terms of costs, is that it assumes that the social welfare function can be aggregated from individual utility functions. Boulding, for instance, shows that from an individual's indifference curve, one can derive an individual's demand curve and that the corresponding buyer's surplus is equal to "the compensating payment which would compensate for the loss of the market," if the marginal utility of money can be taken as constant. For computing a policy total welfare cost, we must aggregate the individual's surpluses so defined; one must further accept to add in one lump sum consumers' surplus, producers' surplus, and budget cost. At this stage, the judgment of the analyst intervenes. Analysts must decide whether or not the assumptions are too heroic for their intellectual tranquility. In any case the assumptions should not be forgotten.

A final set of limitations of the surplus approach is that it is fundamentally based on partial equilibrium analyses. Dardis (1967) has carefully spelled out the limits resulting from this feature: "The use of partial equilibrium analyses in the present study rests on the following assumptions:

1. The relative unimportance of grain production and trade in grain in the United Kingdom economy;

2. The equivalence of consumer prices to free market prices resulting from the employment of a deficiency-payments system;

3. A relatively inelastic domestic supply;

4. An elastic world supply."

This should be sufficient to illustrate the type of assumptions which must be made to ignore the macroeconomic effects of a policy change.

The analysis in terms of costs of the CAP has often been unduly restricted to the political debate regarding budget contributions. Economists have identified other types of costs due to the trade and welfare effects of the policy. These can indeed be viewed as the total costs of the policy. But, estimating them is fraught with many theoretical difficulties, in addition to the practical and technical ones which have not been discussed in this paper. In my judgment, the most serious limitation stems from the use of static partial equilibrium analysis which is not well suited for analyzing the long-term impact, particularly in terms of possible resource misallocation, of the CAP. These effects could only be assessed in the framework of a dynamic model, reflecting changes in farm structures, labor and other input use, technical and institutional changes, etc. This implies that long-term total costs are not of much use because they are too far removed from the concept of opportunity costs 8/ and they rely on shaky assumptions about the existence of a long-term equilibrium. By contrast, it may be very useful to identify the diverse short-term costs associated with a contemplated change in policy. This is what we try to illustrate in the following section.

Costs Associated With Dairy Policy Alternatives

Here, an attempt is made at identifying various costs associated with possible changes in the CAP. No attempt will be made at adding up these costs, in the belief that identification of diverse costs, together with the identification of the gainers and losers, is more useful in the policy debate than a global judgment about the effectiveness of each policy. In this respect a serious limitation of the exercise should be pointed out: The analysis is conducted at the Community level, and no attempt will be made to disaggregate at

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8/ The previous presentation of the historical background and of the structure of European agricultural policies should hopefully be sufficient to convince the reader that there is no reference situation, such as totally free trade for instance, against which to usefully compute total cost.

national levels. As already indicated, domestic costs will only be taken into account. Assuredly, the costs to outside countries can be very important but they are outside the scope of this paper.9/

First, I tried to build a specific enough analytical framework for the agricultural sector as a whole. But, this proved to be inadequate because, as seen above, there exists a large variety of measures supporting the various markets; it is not possible to build a specific enough frame of analysis to handle all these instruments at once, or this can only be done in very general and not very useful terms. Therefore, I chose to work on the example of a market for one product. Milk was chosen because dairy policy is one of the most controversed in the EEC. Dairy surpluses have accumulated and their disposal takes a large share of FEOGA expenses. A coresponsibility levy, that is, ultimately a decrease in the level of price support, has been instituted and this has been the object of numerous debates, particularly between the EEC Commission and farm organizations as well as among farmers, many of them being upset with their organization officials for having accepted the scheme.

Given the current debate about CAP problems two alternatives to the current policy will be examined: a reduction in the level of price support and the establishment of marketing quotas with differentiated prices. 10/ Each one constitutes a prominent feature of proposals made over the last few years: for the former by the Commission and for the latter by the French Socialist Party.

Reduction In Level of Price Support

The analysis of the effects of a decline in the price-support level is conducted in figure 1. It is assumed that at intervention price Pi, the quantity produced (Qp) is determined on the domestic supply function (Sd), while quantity consumed (Qc) is determined on the domestic demand function. Neglecting intervention storage, or assuming that it is only temporary, the difference must be exported. So if Qe is quantity exported, Qe = Qp - Qd. For each intervention-price level, a quantity to be exported can thus be derived; this is expressed on the right-hand side of figure 1 by the export supply function (Se). In present circumstances, the corresponding point on the (Se) curve is well-above the corresponding demand curve (De) on the export market, which sets the level of price (Pe) at which Qe can be exported. A restitution equal to Pi - Pe has to be paid out by FEOGA. When the intervention price is decreased from Pi to Pi', under usual assumptions

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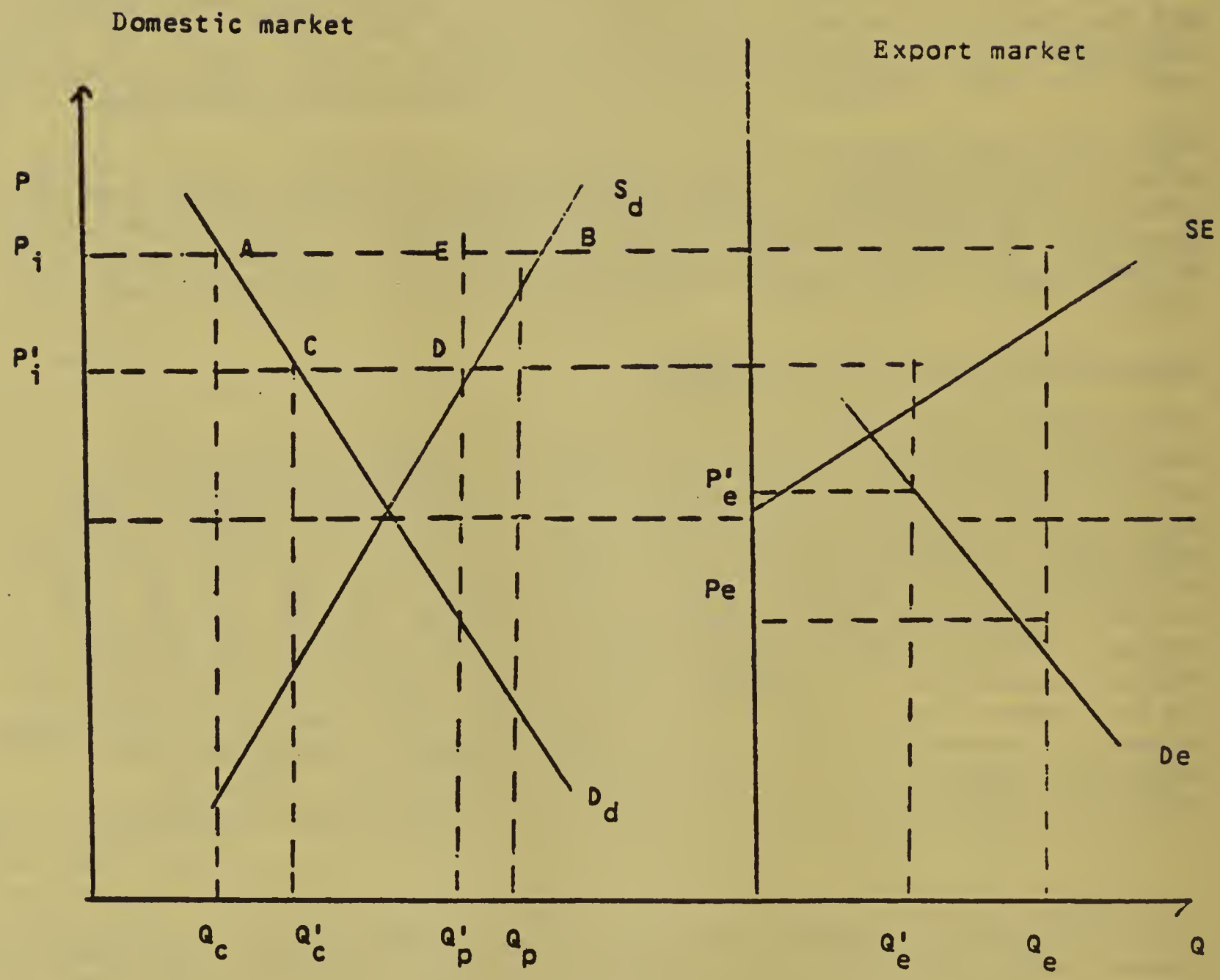
9/ For a recent evaluation see (25), who also show that the results can be somewhat surprising. Thus, they estimated that if a 50-percent reduction across the board in tariffs and other trade barriers for 99 commodities in 19 Organization for Economic Cooperation and Development (OECD) countries would greatly benefit the LDCs as a whole, it would not help the low-income group of LDC's, the welfare gains on exports being offset by losses on reduced imports of cereals.

10/ For a recent and general presentation see (14); a good collection of papers regarding national attitudes was presented in Bruges in 1979; see the papers by Clerc, Marsh, Ferro, Lechi and Ricci, and Tangermann, in (24).

Fig 1 : Impact of a decline in price support level.



regarding short-term demand and supply elasticities, less is produced (Q'p), more is domestically consumed (Q'c), less will have to be exported (Q'e), fetching a higher price (P'e) on the export market.

The budget, trade, and welfare impacts (costs) are straightforward:

Budget savings are equal to: Qe (Pi - Pe) - Q'e (P'i - P'e). The amount saved is the greater: the larger the decrease in price intervention, the greater the elasticity of domestic supply; the greater the elasticity of domestic demand, the lower the elasticity of export demand.

The balance of payments impact is equal to Q'eP'e - Qe Pe. It is a function of domestic supply and demand elasticities and export demand elasticity. If the latter is larger than 1, a decline in intervention price brings about a loss in foreign-exchange earnings.

The consumers' gain, estimated as the change in consumers' surplus, is the area $P_iACP'_{ij}$.

Obviously the greater the price decline, the larger is the consumers' gain; the latter also increases with the elasticity of domestic demand.

The producers' loss, estimated in the same manner, is the area $P_iP'BD_i$. Of course, it depends on the extent of the reduction in intervention price, and on the elasticity of domestic supply; the greater that elasticity, the lower the loss of producers.

The value of resources transferred out of agriculture is equal to area $Q_pQ'_pDB$. It is the greater the larger the decline in intervention price, and the larger the elasticity of supply.

These results shed some light on the debates about this policy alternative. Of course, producers are against it, while those who have the consumers' and taxpayers' welfare at heart are for it. Let us note that, beyond this obvious conflict of interest, much depends on supply and demand elasticities which are poorly known. If the domestic supply and demand elasticities are low and the elasticity of export demand relatively high, a likely situation, the consumers' gain is not very large, while the producers' loss is large and the impact on the balance of payments is negative. Since, in addition, the amount of resources transferred to other sectors was limited, one can understand why it was only under budget pressure that this policy change was proposed.

Quotas and Differentiated Prices

For the sake of clarity, only a simple version of this policy will be discussed here. The analysis is conducted in figure 2, drawn in the same manner as figure 1. With current policy, the same initial situation prevails, characterized by Pi, Qp, Qc, Qe, and Pe. Let us assume now that up to a total quantum q, the same intervention price Pi prevails and that beyond the quantum a, lower intervention price P'_i is enforced. We assume further than the quantum is distributed in individual quotas to producers in such a manner that they all face a marginal price P'_i. Thus, Q'p is produced at the intersection of (Sd) with price P'_i. The export supply curve changes since Q'e = Q'p - Qc, the price to consumers having not changed this time. (Se) "tilts" counter-clockwise to (S'e). The same export demand curve gives us the price P'e at which Q'e can be exported.

The budget, trade, and welfare effects can be analyzed as follows:

Budget savings are represented by the shaded area on the left-hand side of figure 2. This results from the fact that q - Qc is still paid by the intervention agency at price Pi, while Q'p - q is bought at P'i. In the initial situation, budget cost was Qe (Pi - Pe). In the new situation it is (q - Qc) Pi + (Q'p - q) P'i - Q'eP'e.

The amount saved depends on the elasticity of supply, the elasticity of export demand, the quantum, and the price differentials. It is greater the larger the price differential, the smaller the quantum, the higher the elasticity of supply, and the smaller the elasticity of export demand.

The balance of payments effect is Q'eP'e - Qe Pe. For a given price differential it depends only on the elasticity of domestic supply, which is the same as the elasticity of export supply since domestic consumption does not change, and on the elasticity of export demand. Here again, if the latter is greater than 1, the new policy leads to a loss in foreign-exchange earnings.

Domestic consumers are not affected.

Producers' loss is represented by the area EBDF. It is the greater the smaller the quantity, the larger the price differential, and the smaller the elasticity of supply.

The amount of resources transferred to other sectors of the economy is represented by area $Q_pQ'_pBD$. As in the previous case, it is the greater the larger the price differential, and the larger the elasticity of supply.

These results also shed some light on the debates around this policy alternative. One can understand why it is attractive in the short run in spite of the well-known long-term problems posed by quotas. 11/

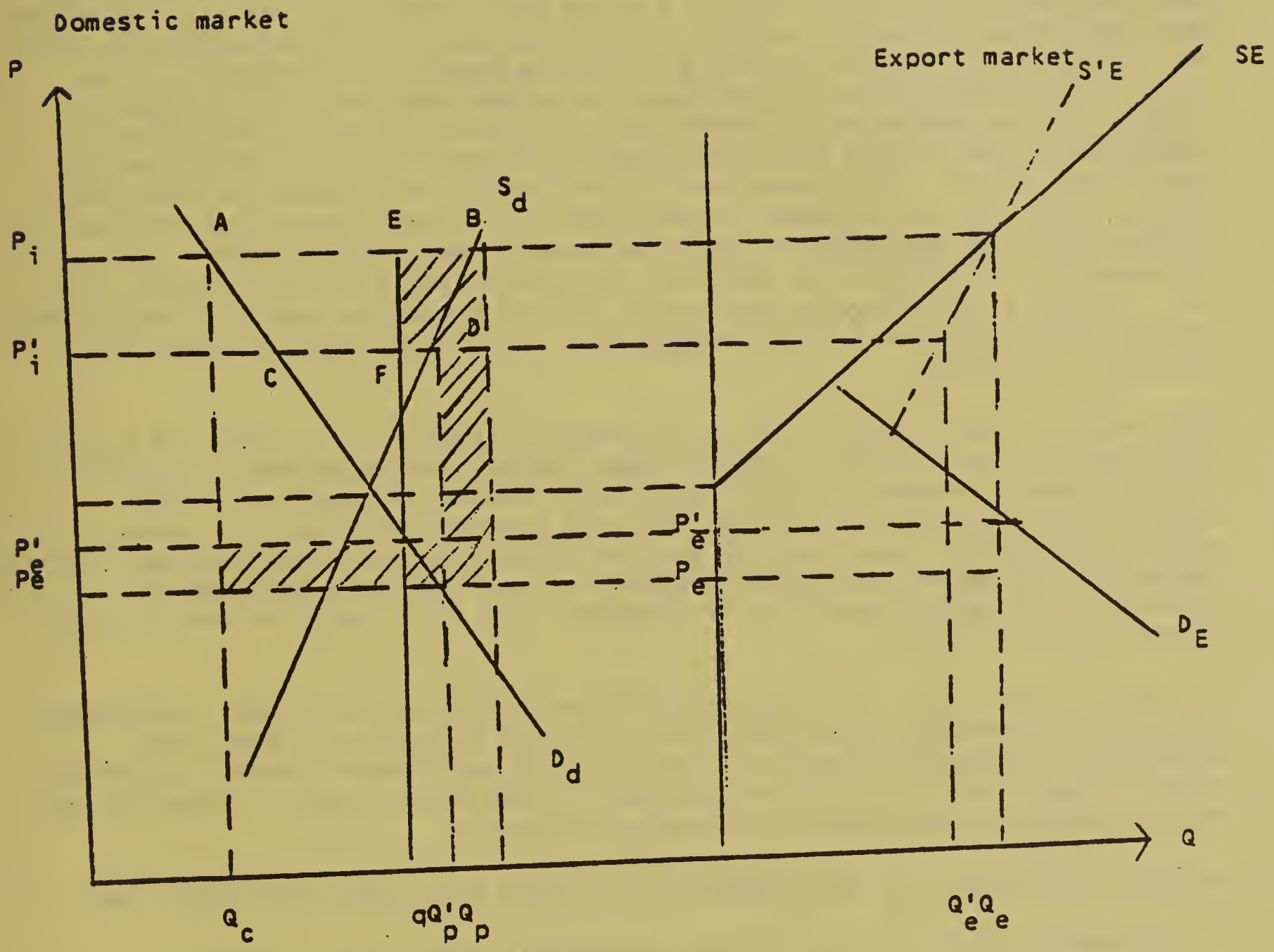
Budget expenses can be reduced, without hurting producers too much. Besides, even though (or perhaps because) there has been little discussion about procedures for distributing quotas among producers, the scheme seems to lend itself easily to some income redistribution among dairy farmers, protecting the smaller ones, while permitting an increase in the price differential if large surpluses would pile up again.

Comparison Between the Two Policy Alternatives

The comparison between the two alternatives, to be useful for policy discussions, must be done holding some variable constant (usually a policy objective variable) and investigating differences in other dimensions of the problem. For the purpose of analysis, it is convenient to compare the impact of the two policy changes for the same reduction in price Pi - P'i, even though prices are policy instruments and not policy objective variables.

11/ (10), Hathaway, 1963).

Fig. 2 - Impact of quotas and differentiated prices.



From the previous analyses, it appears that the same price differential brings about the same reduction in total supply and the same reduction in the use of mobile resources. With a reduction in the level of support, consumers gain more, producers lose more, and the reduction in budget expenditures is larger than with the establishment of marketing quotas and of a price differential equal to the price reduction of the first alternative. The balance of payments effect is larger in absolute value with the former than with the latter, its sign depending on the elasticity of export demand.

The preference for one, rather than the other, of these two alternatives will thus depend on the relative weights given to these various gains and losses. In any case, it seems difficult to incorporate them in a single social utility function, of which one could then seek the optimum.

In order to clarify the choice, it would be more useful to compare the two alternatives for the same value of a given policy objective, for instance, for the same amount of budget savings. Simple algebra shows that equalizing the two expressions of budget savings given above leads to one equation of the first degree relating three instrument variables (decline in price support level, quantum, and price differential), the parameters of the equation, depending on the initial price and quantity values, and the elasticities of supply and demand. This means that it is possible to achieve the same budget savings but, if a quota scheme is enforced, the price differential must be greater than the reduction in the price-support level of the first alternative. The larger the quantum, the greater the price differential must be. Assessing geometrically the impact of such comparable policy alternatives on the other variables becomes unmanageable. One would need to resort to a simulation exercise.

This exercise will hopefully be sufficient to illustrate the limits of policy analysis in terms of costs. Within these limits, the usefulness of such an analysis should, however, not be neglected. One may perhaps regret that agricultural economists have given too much attention to long-term costs, which in my view at least are not very meaningful and only very partial, while neglecting the short-term impacts, which can more easily be analyzed in reference to a partial equilibrium framework, and which weigh so much in the policy decision process.

Of course, this state-of-the-art is not intellectually satisfying. Economists often pride themselves with their ability to pay attention to long-term adjustments; whereas policymakers, particularly politicians, cannot afford to do it. Thus, the point of view expressed in this paper tends to undermine the social function traditionally claimed by economists.

Actually, the thrust of the argument is a little more complicated than that:

- Economists should be careful not to oversell their case. Economic analysis of policy issues is always partial and should not be presented as global and comprehensive. In this respect, the concepts of long-run total cost and effectiveness are dangerous.

- But, partial analyses can be very useful and concepts of short-term costs to various social groups are relevant.

- Long-term impacts are of course essential and, therefore, should be investigated. Economic tools can be very useful for that purpose, so much more so if the analysts are keenly aware of their main limitations. What we need are approaches to the dynamics of adjustments and of the interrelationships between economic and political phenomena.

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Discussion

Alex F. McCalla

The three papers presented are interesting though quite different in approach and content. I want to begin with some brief comments on each of the papers and then turn to look at similarities and differences among domestic policy approaches in these three, major, developed country participants in international trade. I conclude with some issues for policy analysts.

All of the papers, in some sense, address the issue of the costs of domestic policy either conceptually and/or empirically. The Clayton and Lee paper is the least ambitious conceptually but most comprehensive in terms of at least one kind of number; namely direct fiscal cost of agricultural policy in the broadest sense. It does not address indirect or social costs, nor does it really address what ought to be measured as cost. It is, however, a valuable beginning.

The Barichello paper is the most ambitious in trying to measure costs: direct, indirect, and social. However, it deals only with a subset of nine commodities (though important ones) of Canadian agricultural policy. Barichello is to be commended for a thorough job of attempting to identify and measure direct and indirect subsidies and taxes. It is a good paper.

The Petit paper contains no numbers but has a very useful conceptual discussion of the issue of what is cost and how should we as economists measure it. But, the paper has more also. The first section is a fascinating and illuminating historical discussion of the long commitment to farm-income support in France, Germany, and the United Kingdom. The second part discusses European policy in its broadest aspect. It should be read carefully by us North Americans who tend to think only of the Common Agricultural Policy (CAP). The third section on costs I will return to later.

Now let me look across the papers for similarities and differences in policy and policy means.

Similarities

The United States, Canada, and the EC all support agriculture in various and sundry ways which involve mixes of direct and indirect subsidies. The mixes vary from country to country, probably in part because of their interface with world markets, a point I return to later.

This commitment to support has a long history. In North America, early efforts to improve agricultural income involved indirect means, such as support of research and extension, marketing services, and enabling legislation for cooperatives and marketing boards. The large increases in direct support in the United States occurred after 1933. In Canada, heavy intervention is of more recent vintage. Thus, in North America we have seen an evolution toward income support via price manipulation. The EEC has manipulated prices and income directly, via tariffs since the 1870's and 1880's, though it has become more elaborate since the 1960's.

In all cases the commitment to a social policy for agriculture is longstanding and deeply ingrained. Petit is the most extreme in arguing that the goal is so strongly held that it is not open to question, at least based on the examples given. Clayton and Lee do not make the point, but I would argue that it is true also in the United States. Barichello seems to lament it but does not suggest it will go away in Canada.

In all cases the transfers are from consumers and taxpayers to farmers.

The composition of the transfers (costs) changes over time, probably mainly as a result of changing economic conditions, especially in the United States.

In general, it seems that aggregate levels of transfers are increasing, particularly on a per farmer basis as farm size grows and numbers diminish. This seem to contradict the often-heard statement that the political power of agriculture is declining.

There are general problems in really grappling with the totality of the transfer because of a Federal structure in the United States and Canada and the CAP versus country policy in the EEC.

In summary, all three entities have a firm and similar commitment to the goal of farm, income support, vis-a-vis the rest of the economy; however, the means vary and change from time to time.

Differences Between Policies

Country policies involve various combinations of support via the between policies price system, via direct income transfer, via indirect transfer through subsidies (for example, Crow rates), via subsidization of inputs, and via endowing farmers with market power (for example, proliferation of marketing boards in Canada).

In general, what policy means are selected is related to the net trade position of the country, commodity by commodity. It is much simpler for importers to support income by price management. The EEC variable levy is a means of domestic income support. Exporters are faced with a more complex problem. The U.S. and Canadian experiences are interesting in terms of how to enhance producer income via various means. The U.S. has used many means, including land withdrawals, export subsidies, and demand expansion programs, such as P.L. 480 and food stamps. Canada has been more indirect. Theoretically, Canada has kept grain prices at world levels but has found other ways to help, such as with the Crow rates and the endowment of farmers with monopoly power.

The impacts of the policy means selected have different impacts on resource allocation and structure. United States policy has encouraged intensification; Canadian grain policy has encouraged extensive development. Barichello notes the potential efficiency loss resulting from marketing quotas. The EEC has tended more to maintain small farm structure, though this is now changing.

Issues for Policy Analysts

The papers raise several issues for policy analysis. These are: (1) what is cost and how should we measure it; (2) the implications of domestic policy for trade policy, for example, are indirect domestic subsidies equivalent to export subsidies; and (3) how can we model international markets in a world full of heavy, complex, and varied forms of policy intervention. I discuss each briefly in turn:

Costs. The Petit paper argues that economists look principally at long-run costs--economic and social. He argues that these should be augmented by short-term budget and foreign-exchange costs and their implications for resource allocation. These are important conceptual questions. Barichello attempts the most comprehensive measurement attempt. Crucial in his analysis is what price he selects for the basis of comparison. Should it be "domestic equilibrium" price or "world price?" It might make a difference in the magnitude of social costs. Clayton and Lee only measure one component, domestic budget cost. The real issue is what costs should be included and how should they be measured. The relevance to trade policy is, of course, the contentious issue of direct and indirect export subsidies or effective protection.

Implications for Trade Position. It is clear that the CAP has encouraged domestic production expansion and has caused the EEC to switch rapidly in many commodities from an importer to an exporter. This has increased costs and expanded the need for export subsidies. United States policy has also increased production because of domestic policy interests. This has required increasing exports to world markets, but the U.S. mentality about their relationship to international markets is based on a small country assumption, even though the United States is now very large. The United States continues to behave as a residual supplier. Canada has been characteristically pragmatic and mixed in its approach. Canada's posture rhetorically has been as a free trader, but on many domestic products Canada is very protectionist and, as Warley has argued, has become balkanized among the provinces.

In summary, none are pure in terms of their trade posture. Rather all are schizophrenic--"free traders" for products they export but "defenders of domestic interests" for products they import. This makes policy analysis very difficult.

World Market Modeling. The last issue is how do we look at world markets when net export supply or net import demand are residuals from domestic policy programs. But that is the task for the next session.

TRADE POLICY, COMMERCIAL MARKET RELATIONSHIPS, AND EFFECTS ON WORLD PRICE STABILITY

The United States

George E. Rossmiller, Fred A. Mangum, and Leo V. Mayer

A review of U.S. Department of Agriculture (USDA) budget testimony reveals important characteristics of U.S. agricultural trade policy through time. One characteristic has been an apparent preference for less rather than more Government intervention in the trade process. A second is that the United States, like all other countries, has found its agricultural trade policies generally shaped by its domestic-price and income-support programs.

The result is that U.S. agricultural trade policy has shifted as domestic policy has changed. Specifically, there have been three important watersheds in U.S. farm policy orientation that have altered the course of U.S. agricultural trade policy. First, prior to 1933 the focus of U.S. farm policy was developmental. Internal population expansion provided the opportunity for agricultural growth with a minimum of Government outlay. Government support was resource oriented--land dispersal and the development of its productivity.

Agricultural commodities dominated the nation's exports during this early period. As late as 1900, farm exports accounted for three-fourths of total export sales, although a relatively small percentage of total agricultural production. Trade policy for agriculture, unlike that for the nonfarm sector, generally favored open markets although growing protectionism toward the end of the period culminated in the Smoot-Hawley Tariff Act of 1930.

The collapse of farm prices after World War I and the passage of the Agricultural Adjustment Act of 1933 marked a turning point for both U.S. farm policy and agricultural trade policy. Policy emphasis shifted from developmental to compensatory. Programs shifted from focusing on land to focusing on the products of land, with relatively high and rigid price supports that sought a return to the more prosperous 1910-14 period.

The early part of the period saw increasing Government involvement in agriculture, with commodity prices determined more by Government policy than by market forces. The latter part of the period--from the end of World War II through 1960--brought a slow realization that satisfactory incomes for some farmers could not be provided by manipulating commodity prices alone. As a consequence, greater attention was given to community development, rural industrialization, improved education, and regional development policies after 1960.

Throughout this 30-year period, agricultural trade policy was a captive of an inward-looking domestic policy. Exports accounted for a relatively minor portion of total farm output and consequently exerted little influence on policymaking. Surpluses, generated by high price supports, created mounting

interest in both domestic and foreign disposal programs. Section 22 and voluntary import restraints sought to protect the established price levels. 12/

A second major turning point came in 1963 when wheat producers rejected a mandatory acreage control plan. The new policy tilt came to full flower with the passage of the Agriculture and Consumer Protection Act of 1973. This period was marked by a turning away from high price supports and relatively tight controls on output in favor of greater reliance on market determined commodity prices and income support derived as needed from target prices and deficiency payments. 13/ This philosophy has continued since and has had obvious implications for U.S. agricultural trade policy and relationships with our trading partners.

Viewed from a trade policy perspective these three periods have seen the United States move from colonial days when agriculture was open and accounted for most of the Nation's foreign-exchange earnings through an inward-looking period where policy priorities were given to inflexible per unit price supports resulting in large and expensive surpluses, to a more recent period of trade expansion. The combination in the sixties and early seventies of a rejection by farmers of greater Government control and resistance by taxpayers to increased storage and disposal costs led to an agricultural trade policy more open to the world. This openness has been threatened recently in reaction to the effects of the world economic slump and mounting surplus stocks. The U.S. agricultural sector, after perhaps another period of high price supports and even export subsidies, for its own long-term health will need to become even more open and interdependent with the world economy.

This brief historical review, and the underlying fact that agricultural trade policy is dependent upon the domestic farm policy in place at the time, leads us to several observations. First, in recent decades there has been a greater reliance on the export market for U.S. agriculture. Second, this reliance has brought about increased price and income instability for U.S. farmers. Third, it has also led to growing economic and political linkages with other governments.

Comparing the fifties and sixties with the period of the seventies shows the effects of two sharply differing policy orientations. Moreover, the comparison suggests changes are needed in both farm and trade policy measures to meet conditions of the eighties.

To state the obvious, export markets and, by implication, trade policy has assumed a larger role in recent years for U.S. agriculture. Total U.S. agricultural exports averaged $3.7 billion per year in the fifties, increased to $5.8 billion annually in the sixties and jumped to $19.7 billion in the

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12/ Section 22 of the Agricultural Adjustment Act of 1935, as amended, requires the President to establish import quotas on price supported commodities, irrespective of existing international agreements, whenever imports threaten the ability of the Government to carry out the domestic price-support program. Since 1951, the United States has had a waiver in GATT for the use of Section 22.

13/ Obvious exceptions remained: dairy, tobacco, and peanuts.

seventies. As a percentage of cash receipts from farm marketings, exports increased from 11.8 percent in the fifties, to 14.4 percent in the sixties, to 22.6 percent in the seventies and have grown to almost 30 percent in the eighties.

The rapidly growing importance of agricultural exports to U.S. farmers and to the general economy cannot be over emphasized. In 1981, the U.S. exported $43.8 billion worth of agricultural products, an all-time record. With agricultural imports of $17.2 billion, the net gain in foreign exchange from U.S. agricultural trade was $26.6 billion. Agricultural export sales accounted for approximately 30 percent of total farm sales in 1981. But, these aggregate figures do not tell the full story. For some commodities the export market is even more important: approximately 65 percent of the wheat, 35 percent of the corn, 41 percent of the soybeans, 54 percent of the cotton, and 67 percent of the rice produced in the United States in 1981 went into the export market. Moreover, agricultural exports in 1981 contributed 1.1 million jobs and $43.8 billion dollars of GNP to the national economy, according to USDA's Economic Research Service.

The relatively rapid growth of U.S agricultural exports is a result of a combination of events. Foremost has been the growth in world population and the global rise in real consumer incomes. Other factors that have driven up the import demand for U.S. agricultural exports have been the general reduction in tariff levels worldwide and, prior to 1980, the low relative value of the U.S. dollar on world markets. Clearly, also, changes in domestic support programs that placed relatively less emphasis on loan rates and more on income support via deficiency payments was a major factor in stimulating export growth. Real loan rates generally decreased from 1950 to the mid-seventies for wheat and corn and have since increased. Perhaps more importantly, seasonal average prices received for both wheat and corn were less than loan rates for most of the fifties and generally exceeded the loan rate afterward indicating less market interference.

While the focus thus far has been concerned with the total value of agricultural exports, a distinction is needed between crops and livestock products. Most changes in domestic support policies were directed to grains and soybeans and only indirectly affected livestock. U.S. support for meat prices has generally been confined to the price enhancement provided by import quotas. On the other hand, dairy products have been assisted both by domestic price supports and effective import constraints.

U.S. trade policy for both meat and dairy products serves as a considerable irritant to our trading partners. Reflecting trade policy restraints (among other reasons) in both the United States and other trading countries, world trade in meats and dairy products has not increased as has trade in grains and oilseeds, which tends to be much less influenced by trade restrictive policy.

While both domestic agricultural support policies and agricultural trade policies have changed to accommodate a favorable growth in U.S. agricultural exports, there have been costs as well. Of special interest is the increased variability in farm prices and incomes in the United States and, to a lesser degree in world markets, a variability associated with a more open trade policy and a domestic support policy that departs from dependence on rigid, relatively high price supports.

Table 1 provides decade by decade comparisons of variability in selected indicators important to the U.S. farm sector. As a generalization, the estimates indicate a growing variability through time. Variation in farm income was ameliorated by government payments and by growing off-farm income, especially for smaller farm units. These results are consistent with those reported by Penn for slightly different time periods. 14/

Besides the increased variability, the recent downward trend in U.S. agricultural exports is of no small concern to farmers and policymakers. FY 1982 agricultural exports declined to $39.1 billion from $43.8 billion in FY 1981, and estimates for FY 1983 exports suggest a further decline to around $35.0 billion. The growth and stability of export markets are of importance to the continued prosperity of the U.S. farmer.

Data in table 1 show an increasing variability of selected indicators of farm income over the three most recent decades. ERS has estimated an increasing instability in U.S. export volumes. In 1950, according to their estimates, the instability was such that an estimate of U.S. export volume would have had a standard error of plus or minus 8 percent representing approximately 5.5 million metric tons. In 1980, the standard error of the estimate had climbed to plus or minus 12 percent and represented 16 million metric tons. The rate of increase in volume instability has grown much faster in the United States than elsewhere.

Two major causes of international market instability are weather and policy. Some argue that as production has been pushed out into marginal, semi-arid, rain-dependent lands and as high-yielding varieties have been adopted that are more susceptible to weather vagaries than are traditional varieties, the variation in cereal production on the world basis has increased. For the comparison of the decades of the sixties and the seventies the statistics show only a slight increase in variation. The average deviation from trend increased from 22.5 million metric tons in the sixties to 38.6 million metric tons in the 1970's (table 2). The coefficient of variation in world cereal production during the sixties was 2.4 percent, increasing only slightly during the seventies to 3.0 percent. Given that only about 15 percent of total cereal production in recent years has been traded in world markets, the instability brought about from variations in production as countries enter or exit or change between importing and exporting can be significant. It has, in fact, been decreasing. The average deviation from trend declined from 7.2 to 6.2 million metric tons while the coefficient of variation for world cereal trade decreased from 7.7 percent in the sixties to 4.2 percent for the decade of the seventies.

A more important source of instability for the United States than either weather or internal policy changes is the policy actions of others. Most countries in the world today, other than the United States, operate through state trading mechanisms, or with border protection measures, or a combination of both that insulate their domestic economies from the vagaries of the world market. Thus, most countries do not adjust or adjust only very sluggishly to world market conditions. They in turn are not sharing in the adjustment

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14/ Penn, J. B., "The Changing Farm Sector and Future Public Policy: An Economic Perspective," Agricultural-Food Policy Review: Perspectives for the 1980's, U.S. Dept. Agr., Econ. Res. Serv., AFPR-4, April 1981, page 47.

Table 1--Comparison of variability (coefficient of variation) in selected indicators of farm income, 1950-79 1/

Indicator	1950-59	1960-69	1970-79
		Percent	
Total cash receipts from farm marketings	5.6	10.8	28.3
Operator's net income from farming	9.7	11.8	29.1
Real capital gains from real estate	152.6	70.8	72.9
Index of prices received by farmers	8.0	4.1	23.7
Index of crop prices received by farmers	6.3	3.2	15.7
Index of livestock and product prices received	3.8	9.3	23.7
Value of agricultural exports	16.6	12.9	44.5

1/ Coefficient of variation is a measure of relative dispersion around the mean. It is the standard deviation divided by the mean multiplied by 100 and expressed as a percentage.

burden but rather have been able to shift a disproportionate, although declining in relative terms, adjustment to the United States. During the sixties the average deviation from trend of world trade excluding the United States was 2.9 million metric tons while that for U.S. trade was 5 million metric tons, nearly twice as large. The respective coefficients of variation were 5.3 percent and 12.9 percent. In the seventies the average deviation from trend for world trade excluding the United States, increased to 3.5 million metric tons while the same for U.S. trade increased to 7.2 million metric tons, slightly over twice as large. The respective coefficients of variation declined to 4.7 and 9.5 percent, thus, the relative stability of U.S. trade increased slightly but remained almost twice as unstable as trade of the rest of the world.

In comparing the standard deviation and coefficient of variation statistics in table 2 of world trade and its component parts (that is, world trade excluding the United States and U.S. trade), one might suggest that the direction of instability in the components tended to be opposite from each other, thus tempering the instability in world trade as a whole. This observation is particularly pronounced in the latter period, suggesting that the farmer-owned

reserve, while not particularly a stabilizing factor for U.S. trade, has been a stabilizing influence on world trade in total. One might expect this conclusion given the nature of the farmer-owned reserve, the rules by which it has operated and the fact that the United States has been the only intentional adjustor in the system to world-market conditions.

It would appear that a "more open" agricultural and trade policy is achieving the objective of increased farm income but without significant declines in price and income instability. The impact of instability is felt keenly on the larger, commercial farm operations which produce the majority of agricultural commodities. Parallel reasoning suggests that the benefits of rising income in the seventies and declining income in the early eighties also affected most the larger farm units.

Apart from the shocks imparted to the U.S. farm sector by the volatility of shifts in relatively inelastic demand and supply functions of foreign countries, three specific factors that contribute to instability are worthy of note. First is the failure of the farmer-owned reserve to provide expected increases in market stability. The logic of the reserve was to allow the market to work within the bounds established by the loan rate as a floor and the (mandatory) release price as a ceiling. The reserve apparently serves this purpose well with relatively small market stock overhangs but appears to have all the weaknesses of any state stocking scheme when large demand-supply imbalances are present.

Second, macroeconomic decisions have also affected agricultural trade: the 1973 soybean embargo, the rapid growth of exports to the USSR and Eastern Europe in the seventies (and the 1980 decision to partially embargo grain exports to the USSR). Obviously, such foreign-policy decisions are impossible for producers to anticipate and yet they affect U.S. farm prices and income as well as those of our trading partners.

Third, policy actions taken by other countries also affect the ability of the United States to export. This category includes the growing use of export subsidies by Brazil and the EC but also includes financial difficulties that cause governments to drastically curtail imports. The sum of all these Government actions, U.S. and other, explains in large part the greater variability of U.S. farm income and veils the effects of U.S. agricultural and trade policies.

An interesting speculation is how much world instability would there have been in the absence of U.S. farm programs. Two programs, land retirement and stocking, have been especially valuable in reducing unwanted quantities reaching the market in surplus periods and thus preventing further price declines, or in increasing quantities entering the market in periods of shortage and thus reducing price increases. U.S. carryover stocks of wheat exceeded the annual volume used domestically in 12 consecutive years in the fifties and sixties. The coefficient of variation of farm prices received in these two decades was a relatively low 8 percent and 4 percent, respectively, even though carryover was unusually low in 1952. By contrast in the seventies, the coefficient of variation of prices received increased to 24 percent.

Table 2--Statistical comparisons of world production, world trade, world trade excluding the United States, and U.S., 1960-80

Item	1960/61-1969/70	1970/71-1979/80
World production:		
"Best fit" form	Exponential	Exponential
R^2	0.94	0.88
Mean (million metric tons)	943.3	1275.1
Standard deviation (million metric tons)	22.5	38.6
Coefficient of variation (percent)	2.4	3.0
World trade:		
"Best fit" form	Power	Exponential
R^2	.61	.94
Mean (million metric tons)	92.8	147.9
Standard deviation (million metric) tons)	7.2	6.2
Coefficient of variation (percent)	7.7	4.2
World trade, excluding U.S trade:		
"Best fit" form	Power	Linear
R^2	.79	.70
Mean (million metric tons)	54.1	72.7
Standard Deviation (million metric tons)	2.9	3.5
Coefficient of variation (percent)	5.3	4.7
U.S. trade:		
"Best fit" form	Power	Power
R^2	.28	.89
Mean (million metric tons)	38.8	75.3
Standard deviation (million metric tons)	5.0	7.2
Coefficient of variation (percent)	12.9	9.5

NOTES

1. "Best fit" form choices were linear, power, exponential, and logarithmic. In all cases X values representing time were taken as 1,...,10.

2. The mean is: $\sum_{i}^{N} Xi/N$, that is, the simple average.

3. Standard deviation formula used was:

$$\frac{\sum_{i}^{N} (Xi - Xi)^2}{N}$$

4. Coefficient of Variation formula used was:

$$\frac{\text{Standard deviation X 100}}{\text{Mean}}$$

The coefficient of variation is the relative dispersion of a variable expressed in percentage terms.

The eighties are likely to see an intensification of both the instability and the slackening of demand in export markets. With the world economies in recession, increasing unemployment and high inflation rates have caused a slackening in demand in the international market. Both intensified export competition and increasing protection have been the result in the past couple of years. Improvement on both counts depends in large degree on world economic recovery.

The problem is exacerbated in the United States by the strength of the dollar, the bumper crops of the past 2 years, and the trade practices of other nations that have excluded the United States from certain markets and have reduced its ability to penetrate other markets, particularly in the high-value category. Thus, the situation today is dramatically different than it was even as recently as when the 1981 Farm Bill was passed. The cost estimate for the 4-year life of the 1981 Farm Bill, when it was passed, was $8 billion. The confluence of factors resulting in slack demand at home and abroad at the same time have drastically softened commodity prices and curtailed exports. Moreover, the 1981 Bill included what appears in hindsight to have been target prices and loan rates that were higher than warranted given the domestic economic situation and the rapid slowing of the inflation rate, and the strength of the dollar in foreign currency markets. The result is that the cost of the Bill in the first year alone stands at $12 billion and is expected to reach about $21 billion in the second year, with little expectation of any sharp declines in the cost during the remaining years of the Bill. Concern and frustration is growing in Congress with the practices of competitor nations in the international market and with the cost of the farm program. The failure of the GATT Ministerial Conference to make any substantive progress on agreements to turn back protectionist tendencies and to limit unfair competitive trading practices intensifies the frustration.

Thus, major changes in the 1981 Farm Bill are likely in 1983. The debate is likely to be hot and lengthy, turning on the fundamental philosophic base upon which our agricultural and trade policy should rest. On the one hand, some will argue that we should return to the farm program orientation of the fifties, with high support prices and rigid production controls through large diversion programs to hold resources, especially land, out of production. Proponents of this policy direction would argue, either explicitly or implicitly, that production for the export market is too costly when all costs are considered and, therefore, the United States should turn inward, produce for the domestic market and forget about exporting to the rest of the world. On the other side will be those who will argue that the United States is the last holdout of an ever increasing number of nations that have rejected the concepts of free trade and comparative advantage and that we can no longer alone afford to continue our open-market, free-trade philosophy. This group may argue that the United States should be prepared to use whatever tools are necessary to meet the export competition and to engage in whatever trade actions that may be necessary to capture or recapture world markets lost through unfair practices of others in the past. Some of this group would further argue that this strategy would lead to free trade in the end as the treasuries of competitor countries become depleted and they are no longer able to finance the unfair trade practices and will thus be forced to the negotiating table.

There are three major problems with the first alternative. First, with 30 percent of farm sales derived from the export market today, it would require substantial increases in commodity prices to maintain, let alone increase, farm incomes with production only for the domestic market. It is doubtful that consumers or taxpayers, or both, will be willing to foot the bill. Second, U.S. agricultural exports account for 39 percent of total world agricultural exports. A disproportionate share of the commodities being exported by the United States are basic food needs for a significant portion of the populations of many countries. On humanitarian grounds alone, it would be extremely inappropriate for the United States to turn its back on the export market. Third, a recent ERS study shows that U.S. agriculture has gained considerable economies of size through increasing production for the export market during the past couple of decades.

The second possible policy direction also presents some difficulties. First, it is an extremely high risk alternative in that trade conflicts, like military wars, may be difficult to limit and contain once they are started. Second, the last thing the world needs at this point is a disruption or decline in trade flows. The only way many countries can hope to come out of their precarious foreign debt situations is through increased trade flows that provide for greater rather than less foreign exchange earnings. Third, loss of the gains from trade by consumers and producers, even by those unprotected producers who are competing with protected producers for resources represent losses to the world economy that can never be recaptured. Again, the world economies do not need those kinds of losses, particularly in their present circumstances. Finally, engaging in trade wars takes a substantial war chest of funds. Unless the United States were to choose targets with a great deal of care to make sure it can inflict the greatest amount of damage to other country's treasuries, at minimal cost to the United States, we simply may not be able to afford such a venture. Overriding these concerns, however, is the further concern among some people that if the United States moves away from the free-trade philosophy it has expounded in the past, there will be virtually no challenge to those nations attempting to increase their protection or unfair trade practices in the future. It would be very difficult for the United States to make such challenges if we abandon the principles of free trade.

Given the present situation and the need to make some major changes in the 1981 Farm Bill, and indeed to begin looking toward the new Farm Bill in 1985 when the present Bill is scheduled to expire, it is appropriate to consider the list of international factors that should be taken into account in crafting such changes.

We start from the premise that with the heavy and growing dependence of the U.S. farm sector on exports it is now essential that domestic agricultural policy be formulated and implemented with considerable regard for international markets and the ability of U.S. farmers to compete in that market. It must also be recognized that domestic policy will trigger policy responses from other nations, trade competitors and trade partners alike. Finally, it must be recognized that in the normal course of other nations developing their own domestic agricultural policies, the effect of those policies will be felt in the United States. U.S. policy must be flexible enough to adapt and adjust to take advantage of the opportunities this might present and to ward off the adverse effects that may be presented.

Several factors that have become important, or increased in importance within the past several years, must be recognized and considered in any policy debate, even though they are external to the influence of domestic agricultural policy. First is the relationship between interest rates, exchange rates, and commodity prices. Generally, interest rates and exchange rates are positively correlated while commodity prices are negatively correlated with both. High interest rates in the United States, for example, increase the international demand for dollars and contribute to an appreciation of the dollar against foreign currencies. Other things equal, a strong dollar makes the United States less competitive in the export market. High interest rates also decrease purchases of farm commodities, domestic and foreign alike, due to the increased cost when interest costs are included and due to the increased carrying cost of stocks. Similarly, high interest rates increase the cost of working capital and of carrying stocks by the farm producer. All of these factors contribute to a softening of commodity prices and, thus, to a cost-price squeeze for farm producers. Thus, monetary policy has become an extremely important determinant of farmer well-being.

Second, given that international trade and international finance are flipsides of the same coin, the health of the international financial system is an important determinant of the level of trade that can be maintained. The alarming increase in foreign debt burden of virtually all the LDCs and many of the centrally planned economies is cause for grave concern, both in its own right and in its influence on trade. It has been estimated that in the coming year approximately $50 billion of additional loan funds will need to be generated just to service existing foreign debt--without consideration of new loans. If these funds cannot be generated--and the commercial banking industry is quite pessimistic--a significant increase in de facto country defaults (reschedulings) can be expected. Not only has the creditworthiness of many countries declined to the point that they are poor risks for export credits, the need for scarce foreign exchange for debt service reduces further their ability to import. The depressed state of the economies of the developed world have been transmitted to the developing world through slack demand for LDC exports, causing a further decline in foreign exchange generation by the LDCs and economic stagnation in their domestic economies. This in turn has caused further slackening of their demand for imports, including for agricultural products.

Summary

We can sum up the characteristics of U.S. agricultural and trade policy in recent years by indicating it is more open to, and interdependent with, the world market than in the decades of the fifties and sixties. The volume of agricultural imports and exports has grown both absolutely and relative to U.S. production. This growth is in response to both pull factors acting on demand as well as policy measures that affect supply and facilitate exports.

Real loan rates (for grain) have generally trended downward over the past 32 years, although there was a rather abrupt change in 1976. In only 4 years since 1960 has the nominal loan rate for wheat exceeded the season average farm price and the same for corn. Deficiency payments beginning in 1963 have offset some of the declining income support of lower loan rates while being more trade neutral.

Accompanying a more flexible loan rate and increased support through other than the price support mechanism has come a greater variation in price and income support for domestic producers. Reflecting a more open trade policy and greater interdependence, this price variability has been transmitted to other market economies. We note, however, that an increasing number of countries have essentially shielded their producers and consumers from all price movements through a variety of measures that include state trading, quotas, two-price systems, and variable levies.

Price variability is perceived in this country as an expected result of a free-market economy, that, while imposing some added cost in the form of risk also offers the opportunity for profit. In this sense the more open economy facilitates commercial relationships and, in fact, business firms generally consider any Government intervention an anathema. In other countries, any form of instability, including price variation, is often looked upon as an evil to be avoided. As a result, Government intervention often exercises more control, and by being directly injected into the commercial process, often is itself a source of instability.

In this environment changes are needed in the U.S. agricultural trade policy. Ideally, the United States might persuade others to allow the market a greater role in allocating resources, to accept a larger burden of price adjustment, and to harmonize policies to some degree to prevent "excessive" price variation. Failing this, the United States may feel forced to adopt policies that insulate domestic producers from the increasing instability to which the United States has contributed, but which more and more is the result of a thinner residual free market.

Appendix table 1--World production and trade of total grains and U.S. exports of total grains, 1960/61 - 1981/83 1/

Year	World production	World trade 2/	World trade as percent of world production	U.S. exports	U.S. exports as percent of world trade	World trade excluding U.S. exports
			Million metric tons			
1960/61	844.9	72.4	8.6	29.9	41.3	42.5
1961/62	805.0	83.3	10.3	35.6	42.7	47.7
1962/63	865.6	82.7	9.6	34.0	41.4	48.7
1963/64	869.3	97.8	11.3	41.1	42.0	56.7
1964/65	922.0	95.0	10.3	40.7	42.8	54.3
1965/66	919.5	110.7	12.0	50.3	45.4	60.4
1966/67	1,005.4	103.4	10.3	42.8	41.4	60.6
1967/68	1,037.0	96.8	9.3	43.3	44.7	53.5
1968/69	1,076.7	89.2	8.3	32.8	36.8	56.4
1969/70	1,087.1	96.9	8.9	37.2	38.4	59.7
1970/71	1,100.8	109.7	10.0	40.3	36.7	69.4
1971/72	1,193.5	109.8	9.2	42.3	38.5	67.5
1972/73	1,160.9	134.3	11.6	70.8	52.7	63.5
1973/74	1,267.9	142.0	11.2	75.4	53.1	66.6
1974/75	1,212.1	136.8	11.3	65.8	48.1	71.0
1975/76	1,243.5	150.6	12.1	83.7	55.6	66.9
1976/77	1,359.7	156.4	11.5	78.6	50.3	77.8
1977/78	1,333.2	166.2	12.5	89.2	53.7	77.0
1978/79	1,460.4	173.8	11.9	95.1	54.7	78.7
1979/80	1,418.5	199.6	14.1	111.5	55.9	88.1
1980/81	1,434.6	212.7	14.8	113.7	53.5	99.0
1981/82 3/	1,487.6	217.7	14.6	109.6	50.3	108.1

1/ Total grains include wheat, corn, sorghum, barley, oats, rye, and milled rice.
2/ Trade data exclude intra-EC trade.
3/ Preliminary.

Source: World Grain Situation/Outlook, Foreign Agriculture Circular, Nov. 1982.

Appendix table 2--Corn loan rate, 1950/51 - 1982/83

Year	Loan rate 1/	CPI 2/	Real loan rate	Season average 1/ price	Ratio average price to loan rate
		(1967=100)			
1950/51	1.47	77.8	1.89	1.52	1.03
1951/52	1.57	79.5	1.97	1.66	1.06
1952/53	1.60	80.1	2.00	1.52	.95
1953/54	1.60	80.5	1.99	1.48	.92
1954/55	1.62	80.2	2.02	1.43	.88
1955/56	1.58	81.4	1.94	1.35	.85
1956/57	1.50	84.3	1.78	1.29	.86
1957/58	1.40	86.6	1.62	1.11	.79
1958/59	1.36	87.3	1.56	1.12	.82
1959/60	1.12	88.7	1.26	1.05	.94
1960/61	1.06	89.6	1.18	1.00	.94
1961/62	1.20	90.6	1.32	1.10	.92
1962/63	1.20	91.7	1.31	1.12	.93
1963/64	1.07	92.9	1.15	1.11	1.04
1964/65	1.10	94.5	1.16	1.17	1.06
1965/66	1.05	97.2	1.08	1.16	1.10
1966/67	1.00	100.0	1.00	1.24	1.24
1967/68	1.05	104.2	1.01	1.03	.98
1968/69	1.05	109.8	.96	1.08	1.03
1969/70	1.05	116.3	.90	1.16	1.10
1970/71	1.05	121.3	.86	1.33	1.27
1971/72	1.03	125.3	.82	1.08	1.05
1972/73	1.01	133.1	.76	1.57	1.55
1973/74	1.32	147.7	.89	2.55	1.93
1974/75	1.10	161.2	.68	3.02	2.74
1975/76	1.10	170.5	.64	2.54	2.31
1976/77	1.50	181.5	.83	2.15	1.43
1977/78	2.00	195.4	1.02	2.02	1.01
1978/79	2.00	217.4	.92	2.25	1.12
1979/80	2.10	246.8	.85	3/ 2.52	1.20
1980/81	2.25	3/ 272.4	.82	3/ 3.11	1.38
1981/82	2.40	289.1	.83	3/ 2.50	1.04
1982/83	2.55	4/ 293.8	.87	3/ 2.65	1.04

1/ Leath, Mack N., L. H. Meyer, and L. D. Hall. U.S. Corn Industry, U.S. Dept. Agr., Econ. Res. Serv., AER-479, Tables 32 and 43, February 1982.

2/ Economic Report of the President, U.S. Government Printing Office, Table B-50, January 1981.

3/ Agricultural Outlook, page 37, June 1983.

4/ 1982/83 estimated on basis of 4 months.

Appendix table 3--Wheat loan rate, 1950/51 - 1982/83

Year	Loan rate 1/	CPI 2/	Real loan rate	Season average 1/ price	Ratio average price to loan rate
		(1967-100)			
1950/51	2.18	77.8	2.80	2.00	.92
1951/52	2.20	79.5	2.77	2.11	.96
1952/53	2.21	80.1	2.76	2.09	.94
1953/54	2.24	80.5	2.78	2.04	.91
1954/55	2.08	80.2	2.59	2.12	1.02
1955/56	2.00	81.4	2.46	1.98	.99
1956/57	2.00	84.3	2.37	1.97	.98
1957/58	1.82	86.6	2.10	1.93	1.06
1958/59	1.81	87.3	2.07	1.75	.97
1959/60	1.78	88.7	2.01	1.76	.99
1960/61	1.79	89.6	2.00	1.74	.97
1961/62	2.00	90.6	2.21	1.83	.91
1962/63	1.82	91.7	1.98	2.04	1.12
1963/64	1.30	92.9	1.40	1.85	1.42
1964/65	1.25	94.5	1.32	1.37	1.10
1965/66	1.25	97.2	1.29	1.35	1.08
1966/67	1.25	100.0	1.25	1.63	1.30
1967/68	1.25	104.2	1.12	1.39	1.11
1968/69	1.25	109.8	1.14	1.24	.99
1969/70	1.25	116.3	1.07	1.24	.99
1970/71	1.25	121.3	1.03	1.33	1.06
1971/72	1.25	125.3	1.00	1.34	1.07
1972/73	1.25	133.1	.94	1.76	1.41
1973/74	1.37	147.7	.93	3.95	2.88
1974/75	1.37	161.2	.85	4.09	2.98
1975/76	1.37	170.5	1.80	3.56	2.60
1976/77	2.25	181.5	1.24	2.73	1.21
1977/78	2.25	195.4	1.15	2.33	1.03
1978/79	2.35	217.4	1.08	2.98	1.27
1979/80	2.50	246.8	1.01	3/ 3.78	1.51
1980/81	3.00	272.4	1.10	3/ 3.91	1.30
1981/82	3.20	289.1	1.11	3/ 3.65	1.14
1982/83	3.55	4/ 293.8	1.21	3/ 3.53	.99

1/ Heid, W.G., U.S. Wheat Industry, U.S. Dept. Agr., Econ. Res. Serv., Tables 19 and 26, April 1980.

2/ Economic Report of the President, U.S. Government Printing Office, table B-50, January 1981.

3/ Agricultural Outlook, page 37, June 1983.

4/ 1982/83 estimated on basis of 4 months.

Appendix table 4--Rice loan rate, 1950-82

Year	Loan rate 1/	CPI	Real loan rate	Season average price	Ratio average price to loan rate
		(1967=100)			
1950	4.56	72.1	6.32	5.09	1.12
1951	5.00	77.8	6.43	4.82	.96
1952	5.04	79.5	6.34	5.87	1.16
1953	4.84	80.1	6.04	5.19	1.07
1954	4.92	80.5	6.11	4.57	.93
1955	4.66	80.2	5.81	4.81	1.03
1956	4.57	81.4	5.61	4.86	1.06
1957	4.72	87.3	5.41	5.11	1.08
1958	4.48	86.6	5.17	4.68	1.04
1959	4.38	87.3	5.02	4.59	1.05
1960	4.42	88.7	4.98	4.55	1.03
1961	4.71	89.6	5.26	5.14	1.09
1962	4.71	90.6	5.20	5.04	1.07
1963	4.71	91.7	5.14	5.01	1.06
1964	4.71	92.9	5.07	4.90	1.04
1965	4.50	94.5	4.76	4.93	1.09
1966	4.50	97.2	4.63	4.95	1.10
1967	4.55	100.0	4.55	4.97	1.09
1968	4.60	104.2	4.41	5.00	1.09
1969	4.72	109.8	4.30	4.92	1.04
1970	4.86	116.3	4.18	5.17	1.06
1971	5.07	121.3	4.18	5.34	1.05
1972	5.27	125.3	4.20	6.73	1.28
1973	6.07	133.1	4.56	13.80	2.27
1974	7.54	147.7	5.10	11.20	1.48
1975	8.52	161.2	5.28	8.35	.98
1976	6.19	170.5	3.63	7.02	1.13
1977	6.19	181.5	3.41	9.49	1.53
1978	6.40	195.4	3.27	8.16	1.27
1979	6.79	217.4	3.12	10.50	1.55
1980	7.12	246.8	2.88	12.00	1.68
1981	8.01	272.4	2.94	9.25	1.15
1982	8.14	288.3	2.82	1/ 8.25	1.01

1/ Estimated.

Appendix table 5--Soybean loan rate, 1950-82

Year	Loan rate	CPI	Real loan rate	Season average price	Ratio average price to loan rate
		(1967=100)			
1950	2.06	72.1	2.86	2.47	1.20
1951	2.45	77.8	3.15	2.73	1.11
1952	2.56	79.5	3.22	2.72	1.06
1953	2.56	80.1	3.20	2.72	1.06
1954	2.22	80.5	2.76	2.46	1.11
1955	2.04	80.2	2.54	2.22	1.00
1956	2.15	81.4	2.64	2.18	1.01
1957	2.09	84.3	2.48	2.07	.99
1958	2.09	86.6	2.41	2.00	.96
1959	1.85	87.3	2.12	1.96	1.06
1960	1.85	88.7	2.08	2.13	1.15
1961	2.30	89.6	2.57	2.28	.99
1962	2.25	90.6	2.48	2.34	1.04
1963	2.25	91.7	2.45	2.51	1.11
1964	2.25	92.9	2.42	2.62	1.16
1965	2.25	94.5	2.38	2.54	1.13
1966	2.50	97.2	2.57	2.75	1.10
1967	2.50	100.0	2.50	2.49	1.00
1968	2.50	104.2	2.40	2.43	.97
1969	2.25	109.8	2.05	2.35	1.04
1970	2.25	116.3	1.93	2.85	1.27
1971	2.25	121.3	1.85	3.03	1.35
1972	2.25	125.3	1.79	4.37	1.94
1973	2.25	133.1	1.69	5.68	2.52
1974	2.25	147.7	1.52	6.64	2.95
1975	0	161.2	0	4.92	0
1976	2.50	170.5	1.47	6.81	2.72
1977	3.50	181.5	1.93	5.88	1.68
1978	4.50	195.4	2.30	6.66	1.48
1979	4.50	217.4	2.07	6.28	1.39
1980	4.50	246.8	1.82	7.61	1.69
1981	5.02	272.4	1.84	6.05	1.20
1982	5.02	288.3	1.74	1/ 5.25	1.05

1/ Estimated.

Appendix table 6--Tobacco (flue-cured) loan rate, 1950-82

Year	Loan rate	CPI	Real loan rate	Season average price	Ratio average price to loan rate
			(1967=100)		
1950	45.0	72.1	.62	51.7	1.15
1951	50.7	77.8	.65	51.1	1.09
1952	50.6	79.5	.64	49.9	.99
1953	47.9	80.1	.60	52.3	1.09
1954	47.9	80.5	.59	51.1	1.07
1955	48.3	80.2	.60	53.2	1.10
1956	48.9	81.4	.60	53.7	1.10
1957	50.8	84.3	.60	56.1	1.10
1958	54.6	86.6	.63	59.9	1.10
1959	55.5	87.3	.63	58.3	1.05
1960	55.5	88.7	.62	60.9	1.10
1961	55.5	89.6	.62	63.8	1.15
1962	56.1	90.6	.62	58.9	1.05
1963	56.6	91.7	.62	57.7	1.02
1964	57.2	92.9	.62	59.2	1.03
1965	57.7	94.5	.61	65.1	1.13
1966	58.8	97.2	.60	70.9	1.21
1967	59.9	100.0	.60	66.8	1.11
1968	61.6	104.2	.59	69.5	1.13
1969	63.8	109.8	.58	71.8	1.12
1970	66.6	116.3	.57	72.9	1.09
1971	69.4	121.3	.57	78.6	1.13
1972	72.7	125.3	.58	83.0	1.14
1973	76.6	133.1	.57	90.1	1.18
1974	83.3	147.7	.56	108.6	1.30
1975	93.2	161.2	.58	102.6	1.10
1976	106.0	170.5	.62	112.5	1.06
1977	113.8	181.5	.63	118.6	1.04
1978	121.0	195.4	.62	132.4	1.09
1979	129.3	217.4	.59	141.1	1.09
1980	141.5	296.8	.57	152.3	1.08
1981	158.7	272.4	.58	--	--
1982	175.9	288.3	.61	--	--

Appendix table 7--Cotton loan rate, 1950-82

Year	Loan rate	CPI	Real loan rate	Season average price	Ratio average price to loan rate
			(1967=100)		
1950	32.41	72.1	44.95	40.07	1.24
1951	33.50	77.8	43.06	37.88	1.13
1952	34.03	79.5	42.80	34.59	1.02
1953	34.55	80.1	43.13	32.25	.93
1954	32.74	80.5	40.67	33.61	1.03
1955	34.55	80.2	43.08	32.33	.93
1956	32.74	81.4	40.22	31.75	.97
1957	32.31	84.3	38.33	29.65	.92
1958	35.08	86.6	40.51	33.23	.95
1959	24.40 1/	87.3	27.95	31.66	1.30
1960	26.63 1/	88.7	30.02	30.19	1.13
1961	33.04	89.6	36.87	32.92	1.00
1962	32.47	90.6	35.83	31.90	.98
1963	32.47	91.7	35.41	32.23	.99
1964	30.00	92.9	32.29	29.76	.99
1965	29.00	94.5	30.69	28.14	.97
1966	21.00	97.2	21.60	21.75	1.03
1967	20.25	100.0	20.25	26.70	1.32
1968	20.25	104.2	19.43	23.11	1.14
1969	20.25	109.8	18.44	22.00	1.09
1970	20.25	116.3	17.41	21.98	1.08
1971	19.50	121.3	16.07	28.23	1.45
1972	19.50	125.3	15.56	27.30	1.40
1973	19.50	133.1	14.65	44.60	2.29
1974	27.06	147.7	18.32	42.90	1.58
1975	36.12	161.2	22.41	51.30	1.42
1976	38.92	170.5	22.83	64.10	1.65
1977	44.63	181.5	24.59	52.30	1.17
1978	48.00	195.4	24.56	58.40	1.22
1979	50.23	217.4	23.10	63.40	1.26
1980	48.00	246.8	19.45	76.40	1.59
1981	52.46	272.4	19.26	--	--
1982	57.08	288.3	19.80	--	--

1/ Choice B loan rates. For producers selecting choice A, the loan rate in 1959 was 3410 and in 1960 was 3242.

TRADE POLICY, COMMERCIAL MARKET RELATIONSHIPS, AND EFFECTS ON WORLD PRICE STABILITY

Canada

Ralph G. Lattimore

Introduction

There have been a number of important developments in Canadian agricultural trade policy over the past decade. Some have originated from perceived opportunities in the domestic and/or international markets while others are responses to pressures from the rest of the economy or the rest of the world. In addition, a wider set of policy developments at home and abroad have had an impact on Canada's agricultural trade even though that was not the original intent.

The Basis for Agricultural Trade Policy

Within the context of Canada's foreign policy set, commercial trade policy is committed to maintaining a relatively open trading environment. To a large degree this policy is dictated by the composition of resource endowments and economic growth objectives. Trade policy within the agricultural sector reflects this principle but is moderated by a strong desire to improve the equity component and ownership pattern in the agricultural production and marketing system. The expansion of the role and powers of marketing boards over the past two decades is a particularly important manifestation of this latter aim.

Agriculture has always played an important but seldom dominating role in overall Canadian economic development, although the regional picture is quite different. Supply responses in Canadian agricultural have been sensitive to the supply of technology and infrastructure focused on regional requirements. Due to the breadth of the resource endowments, agricultural supply has also been sensitive to levels of incentive relative to other sectors. As a resource rich country with a small domestic market, these incentives have been affected to a considerable degree by the relative buoyancy of world markets and foreign policy intervention. These influences have been important historically as well as in more recent times. For example, the prosperity of the Eastern grain sector was strongly affected 200 years ago by changing corn laws in Britain as well as by U.K./U.S./Canada trilateral trade relations. The result of these interventions were similar to those we face today in grain marketing.

Canada has always been a major importer of food. In early times, the colony was a net food importer. Today, food and agricultural imports continue at a high level over a broad range of products. High levels of consumer incomes place a large premium on year-round quality and variety. However, with increased research and market development efforts, an improvement in the self-sufficiency ratio of a number of products is likely to occur in the near future.

With the development of agriculture in western Canada, a net export position in certain agricultural products became and has remained an important source of economic growth. The importance of these export products has varied, depending on relative international prices for forest, mineral, and agricultural products.

For geographic and other reasons, cooperative efforts in primary agriculture have always been strong in Canada. However, for many decades these efforts were not stimulated by governments. The first establishment of the Canadian Wheat Board (CWB) in 1919, for example, was primarily a response to the establishment of similar agencies in the United States and by the Europeans. It was disbanded immediately following the crisis and 18 years passed before the Wheat Pools finally won approval and support for group action in grain marketing. This historic conflict exemplifies conflicts in marketing philosophy which continue today.

Throughout this early period agricultural trade flourished both in terms of expanding exports and imports. Government support for agriculture was limited to include such things as research, extension, modest price support and credit operations and support for the recreated CWB.

Over the last two to three decades there has been a growing political acceptance of the producer's desire to buffer the impact of technological change in agriculture, to provide a higher degree of countervailing power against the processing, distribution, and retailing (PDR) sector, to provide more orderly marketing arrangements, and to provide a greater degree of insulation for Canadian agriculture from shocks in world agricultural markets. Building on the experience of the CWB and Provincial fluid milk marketing boards from the thirties onward, approximately 110 marketing boards have been established covering most segments of Canadian agriculture.

During the seventies, three producer controlled national marketing boards (egg, turkey, and chicken) were created with administered price setting and supply control powers and supported by quantitative trade restrictions in accord with Article XI of the GATT.

Over the last period there have been continuing producer concerns over Canadian ownership at the producer, but more particularly at the processing and distribution level. These concerns are reflected in restrictions on who may purchase a quota and the Foreign Investment Review Agency (FIRA). (A notable exception to this tendency was the expansion of the vertically integrated hog industry in Quebec.) These concerns, in the face of mounting dissatisfaction with the performance of world agricultural markets, have tended to stimulate import substitution programs which increase self-sufficiency and insulate the domestic subsectors from external shocks.

A second major thrust has been associated with further development of agricultural potential (buffered by price and income stabilization programs). This thrust was aided significantly by research and extension programs. To a large extent the expansion effect has been export oriented for products like hogs, 'board' grains, canola, beans, corn, beef cattle, and a wide range of special crops. In developing this thrust, policy intervention was important though trade policy instruments played a more neutral role.

The pattern of trade in agricultural products over the past 5 years (table 2.1) reflects the effect of these policies to some extent. Net trade in grains, special crops, oils, and meat has expanded as a result of an expanding agriculture in both western and eastern Canada. Net trade in poultry and eggs have remained relatively static under supply management schemes, while dairy product net trade has expanded.

Table 2.1--Canada, net trade in agricultural products, 1972-81 1/

Commodity	Average 1972-76	1977	1978	1979	1980	1981
			Million dollars			
Grain	1,889	2,187	2,301	2,649	4,227	4,648
Grain products	102	134	111	108	103	175
Animal feeds	53	94	81	114	126	135
Oilseeds	210	294	390	687	446	559
Oilseed products	-113	-125	-149	-159	-65	-61
Animals, live	113	105	139	176	141	31
Meat	-50	-73	-22	96	227	319
Other animal products	18	59	31	76	101	50
Dairy products	18	59	31	76	101	50
Poultry and eggs	-14	-32	-32	-48	-11	-17
Fruits and nuts	-409	-606	-751	-897	-928	-1,055
Vegetables (excluding potatoes	-169	-275	-336	-364	-309	-393
Potatoes	3	-4	-6	-10	26	21
Seeds	2	-4	-9	-20	-19	-32
Maple products	7	10	11	15	15	18
Sugar	-283	-189	-165	-200	-532	-434
Tobacco	55	55	89	129	39	123
Vegetable fibers	-66	-79	-87	-108	-125	-128
Plantation crops	-265	-658	-708	-769	-783	-716
Other agricultural products	-102	-153	-175	-171	-162	-196
Total agricultural products	885	768	728	1,365	2,589	3,162

Food imports have also expanded rapidly in absolute terms. Net imports of fruit and vegetables in 1981 were more than one-third of grain exports. Plantation crops and sugar imports added a further $1 billion to the food import bill.

Agricultural trade policy in the seventies has also responded to two related macro policy thrusts. The decade is marked by growing intervention and regulation of the economy as a whole (Stanbury, 1982). This was at least partially related to the persistent instability in world commodity markets, economic performance and foreign trade policy responses. It appears that the interventionist mood in Government provided greater opportunities for agricultural program and policy development as a means of maintaining intervention parity across major sections of the economy. Whether such parity has been achieved remains an unanswered empirical question, but the growth in program costs and tax expenditures benefiting nonagricultural sectors suggests

that agriculture may not have received its relative share over the last decade. This issue may not be important from an efficiency standpoint; it may be very important in regional political terms in an environment of economic uncertainty.

Agricultural Trade Policies

Tariffs. Canada has three systems of tariffs, the British Preferential (BP), Most Favoured Nation (MFN), and the General System of Preferences (GS)) for selected developing country products. With two areas of exception tariff changes have not been used extensively in recent years as a major instrument to guide agricultural investment output and consumption. Generally, tariffs have been kept at low levels and in many instances are zero (Table 3.1).

Tariff concessions granted in the GATT Tokyo Round have resulted in further reductions in bulk agricultural commodity tariffs and a realignment of the gap between MFN and BP rates, particularly on products traded with the United States.

The tariff has been used more extensively in recent years to stimulate two areas of agricultural output--for import competing fruit and vegetable production and for agricultural processing industries. However, in the former case, these new horticultural tariffs with their ancillary surtax mechanism have been used selectively to have an impact only (or mainly) during the Canadian harvest period. The effect has been to support domestic price levels relative to international prices during the seasonal low-price period for the benefit of producers, while maintaining world-price parity at all other times to benefit consumers. The tariffs shown in table 3.1 for peaches and lettuce are representative of these horticultural tariffs.

Typical tariffs intended to promote an expansion in agricultural processing are shown in Table 3.1 for vegetable oils and processed vegetables. These tariffs range from 10-17.5 percent ad valorem. It is not clear, however, that the presence of these processing industry tariffs has had the desired effect on industry structure in term of firm ownership. There is a rationale for believing that these tariffs have tended to encourage the establishment of foreign-owned branch plants in Canada (Green, 1980). The justification for these tariffs is to overcome a perceived lack of economies of scale, vis-a-vis potential international suppliers.

Export Subsidies. Explicit taxpayer funded export subsidies are not used extensively for agricultural and food products. In 1977 the Government did write off the accumulated deficit in the export account of the Canadian Dairy Commission, and Federal dairy subsidies do apply to a portion of market shared quota destined for export but these are exceptions rather than the rule. The major forms of direct export assistance are export credits and export promotion through the departments of External Affairs, Regional and Industrial Expansion, Agriculture Canada; and the Export Corporation (CANAGREX) is purported to increase this effort.

Quantitative Restrictions. The most important trade policy instruments currently being used to increase the degree of self-sufficiency in agricultural production and to support the marketing and production plans of marketing boards are quantitative restrictions. These take the form of explicit quotas and import licensing arrangements under the Import-Export Permits Act.

Table 3.1--Selected Canadian import tariffs, agricultural products, 1982

Tariff item	Commodity	Unit	British preferential tariff	Most-favorite-nation tariff
6000-1	Wheat	bushels	Free	12 cents
5600-1	Oats	bushels	Free	2.5 cents
5200-1	Barley	bushels	Free	6.6 cents
5501-1	Yellow dent corn	bushels	Free	6.9 cents
5505-1	Grain sorghum	bushels	6.9 cents	6.9 cents
27625-1	Soybeans		Free	Free
27605-1	Rapeseed		Free	Free
27704-1	Soybean meal		Free	Free
27712-1	Corn oil, crude	percent	Free	10.0
27718-1	Soybean oil, crude	percent	Free	10.0
27732-1	Corn oil, refined	percent	12.5 cents	17.5
27739-1	Soybean Oil, refined	percent	12.5 cents	17.5
501-1	Cattle			
	less than 200 lbs.	pounds	Free	1.0 cents
	200-699 lbs.	pounds	Free	1.0 cents
	700 lbs. and over	pounds	Free	1.0 cents
600-1	Live hogs		Free	Free
701-1	Beef and veal, fresh, chilled or frozen	pounds	2.0 cents	2.0 cents
704-1	Pork, fresh, chilled, or frozen		Free	Free
703-1	Lamb and mutton, fresh, chilled, or frozen	pounds	4.0 cents	4.0 cents
905-1	Poultry, live	pounds	2.0 cents	2.0 cents
930-1	Chicken and turkey, eviscerated	percent	12.5	12.5

Footnotes at end of table.

Continued

Table 3.1--Selected Canadian import tariffs, agricultural products, 1982--Con't

Tariff item	Commodity	Unit	British preferential tariff	Most-favorite-nation tariff
6				
1600-1	Shell eggs	doz.	2.0 cents	3.5 cents
4305-1	Powdered milk	pounds	2.5 cents	3.5 cents
1800-1	Butter	pounds	8.0 cents	12.0 cents
1700-2	Cheddar cheese	pounds	3.0	3.0 cents
6928-1	Mixed feeds	percent	5.0	5.0
9202-1	Apples, fresh		Free	Free
9212-1	Peaches	pounds	Free	3 cents but not less than 12.5 percent for 24 weeks maximum or free
8724-1	Lettuce	pounds	Free	1.25 cents but not less than 15 percent for 16 weeks maximum in 2 periods or free
8305	Potatoes, table	100 lbs.	36.6	36.6
8904-1	Corn, canned	percent	6.5	12.5
8905-1	Tomatoes, canned		13.6	13.6
13400-1	Sugar, raw (95-96)	100 lbs.	Free	$1.00
14203-1	Tobacco, unstemmed	lb.	17.28 cents	17.28

1/ Import permit required.
2/ Subject to reductions up to 1987 as result of "phase-in" agreements arising out of the GATT Multilateral Trade Negotiations Tokyo Round.
3/ Canada, Australia, and New Zealand Trade Agreement rates are lower.

Source: Agriculture Canada, Tariffs on Selected Agricultural Products: Canada, United States, E.E.C., Japan, Ottawa, June 1980.

Quantitative restrictions are used to protect the operations of the Canadian Wheat Board, Dairy Commission (CDC), Egg Marketing Agency (CEMA), Chicken Marketing Agency (CCMA), and Turkey Marketing Agency (CTMA). A quota is also in place for beef under the Beef Import Act. In 1982 import quotas in effect amounted to 6.3 percent of broiler chicken production, 0.6 percent of egg production, 45 million pounds of cheese, and 139.2 million pounds of beef.

Multilateral and Bilateral Agreement

A most important set of trade policies for Canada involve the GATT agreement and various bilateral and commodity agreements. The most important bilateral arrangement is the Canada/USSR grain agreement. Successive agreements since the early sixties have contributed to the USSR becoming the largest importer of agricultural products from Canada since 1980. In addition, there is a wide range of other bilateral agreements which have specific tariff concessions. A listing of bilateral agreements with significant agricultural implications is given in appendix C.

The Trade Effect of Policy Intervention in Canadian Agriculture

This section assesses the extent to which the existing institutional and policy structure of the agricultural sector has changed the volume, direction, and prices of trade in agricultural products. A final section will examine impacts on the stability of world markets. Initially a standard unilateral free-trade basis is chosen for comparison. Modifications are discussed later.

This analysis focuses on changes in the volume of output from the primary agricultural sector which have resulted from policy intervention as it existed in 1980. The primary sector is chosen so as to narrow the discussion and abstract from another set of trade policy effects of a different nature which result from intervention and regulation of Canada's agricultural processing system. Trade effects are estimated for the primary agricultural sector as a whole. This analysis complements subsector analyses provided in Barichello (1982A).

Previous Studies. There have been a number of studies which have estimated the degree of protection in Canadian agriculture and/or its trade effect over the past decade. Selected results from seven of these studies are presented in tables 4.1 and 4.2. Two types of price-related measures were used in these studies: rates of protection and subsidy (or tax) equivalents. In one study, carried out by Josling for FAO, trade effects were also computed.

In table 4.1, it is shown that there is a reasonable consistency between the estimates for some commodities and a marked divergence for others. Protection measures for canola, flaxseed, corn, soybeans, pork, apples, and primary agriculture as a whole are low with effective rates of protection ranging between -3 percent and 10 percent. Protection measures for other commodities range widely. For example, Soe-Lin (1980) estimates an effective rate of protection for the wheat sector of 13-15 percent. This is broadly comparable to the level of protection estimated by FAO (1974), Lattimore (1975), and Josling (1978). However, it is significantly lower than estimates obtained by Dauphin and Roma (1975), and Harling and Thompson (1981). Similar patterns emerge for barley, sugar, beef, poultry, eggs, and milk.

Table 4.1--Recent measures of protection in Canadian agriculture

	Wheat	Barley	Canola	Flaxseed	Corn	Soybeans
					Percent	
Nominal rate of protection:						
Wilkinson, 1970	--	--	--	--	--	--
Dauphin, 1970	--	--	--	--	--	--
Harling, 1976	0	0	--	--	--	--
Soe-Lin, 1978	3.0	3.0	0	0	3.0	0
Effective rate of protection:						
Wilkinson	--	--	--	--	--	--
Dauphin	27.5	--	--	--	--	--
Harling	40.4	66.9	--	--	--	--
Soe-Lin	-13.0	12.0	--	7.0	9.0	
	15.0	14.0	3.0	8.0	10.0	1.0
Producer subsidy equivalent:						
FAO, 1969	8.0	11.0	--	--	6.0	--
Lattimore, 1974	4.0	4.0	--	--	2.0	--
Josling, 1978	16.4	--	--	--	--	--
Glen and Carter, 1970-81	14.5	9.1	5.2	4.7	--	--
Consumer tax equivalent:						
FAO	8.0	4.0	--	--	6.0	--
Lattimore	-30.0	1.0	--	--	4.0	--
Josling	-22.0	--	--	--	--	--

Continued--

Table 4.1--Recent measures of protection in Canadian agriculture--Continued

	Potatoes	Beef	Pork	Poultry	Eggs	Sugar	Milk	Apples	Agri-culture
						Percent			
Nominal rate of protection:									
Wilkinson, 1970	--	--	--	--	--	--	--	--	2.0
Dauphin, 1970	--	--	--	--	--	--	--	--	2.0
Harling, 1976	2.0	3.1	0.8	42.0	36.3	-31.0	0	--	--
Soe-Lin, 1978	7.0	3.0	0.8	6.0	6.0	77.0	--	--	--
Effective rate of protection:									
Wilkinson	--	--	--	--	--	--	--	--	0.5
Dauphin	--	--	--	--	--	--	--	--	7.0
Harling	11.4	28.4	2.5						
Soe-Lin		16.0	3.0	--	27.0	24.0	--	-68.0	--
	20.0	8.0	-3.0	38.0	31.0	.	215.0	1.0	--
Producer subsidy equivalent:									
FAO, 1969	--	--	--	--	--	26.0	79.0	--	--
Lattimore, 1974	--	--	--	--	--	3.0	48.0	--	--
Josling, 1978	--	--	--	--	--	7.6	62.3	--	--
Glen and Carter, 1970-81	--	--	--	--	--	--	--	--	--
Consumer tax equivalent:									
FAO	--	--	--	--	--	3.0	78.0	--	--
Lattimore	--	--	--	--	--	-3.0	23.0	--	--
Josling	--	--	--	--	--	15.0	45.0	--	--

Table 4.2--FAO Trade performance measures, Canada, 1968-70

Item	Unit	Wheat	Barley	Corn	Sugar	Milk
'Montant de Soutien'	Percent	2.2	10.7	4.3	68.2	268.0
Trade volume effect	Million metric tons	.59	.54	.15	1.02	3.22
Increase in imports	Percent	--	--	21.4	2.1	1/
Decrease in exports	Percent	6.2	38.6	--	--	1/

-- = Not applicable.
1/ Switch from exporter to importer.

Source: FAO, "Agricultural Protection: Domestic Policy and International Trade," CCP 74/17/3, Rome, 1974.

The FAO study estimated that protective policies operating over the period 1968-70 resulted in wheat and barley exports 6 and 39 percent, respectively, higher than they would have been in a multilateral free-trade environment. Corn and sugar imports would have been higher by 21 and 2 percent, respectively, and Canada would have switched from a net export to net import position basis in dairy products.

Aside from differences in methodology, variations in these estimates can be attributed to three major factors. Firstly, the instruments employed have usually tended to stimulate production and these have changed markedly over the decade of the seventies. For example, Dauphin and Roma (1975), in choosing 1970 as the base year, included the impact of the Lower Inventories for Tomorrow (LIFT) program which has not been repeated. This choice of date raised their protection rate significantly. Secondly, the studies vary in their degree of coverage of protective instruments included. Finally, many protective instruments in Canadian agriculture are explicit stabilization measures of one type or another. Their application in counter-cyclical fashion leads to year-to-year variations in their protective effects as measured in these studies. This point may be demonstrated by the three estimates of Consumer Tax Equivalent (CTE) on wheat. The FAO estimate was made at the beginning of what was to become the two-price wheat policy, while export prices were closely aligned to the minimum International Wheat Agreement (IWA) price. The resulting tax on consumers was small. In the mid-seventies, the domestic milling price was kept low relative to the export value and the CTE became strongly negative.

It is noteworthy that the rates of protection estimated for the agricultural sector as a whole are positive but small relative to estimates made for other sectors of the economy. The effective rates of protection in the manufacturing sectors for 1970 where all positive and ranged from 2 percent on transportation equipment to 44 percent on petroleum and coal products (Wilkinson and Norrie, 1975.

The Trade Effect of Policy Framework

Policies designed or which result in changes in the volume of Canada's trade in agricultural commodities include explicit policy instruments of Federal and Provincial Governments and policies enacted by quasi-government producer or private institutions authorized by Governments.

Ideally, the unilateral trade effect of existing policies should be measured against a basis which reflects the degree of comparative advantage of the sector in the absence of policies, defined above. Two problems require recognition in addressing this issue. Firstly, Thompson and Abbott (1982) and others have pointed out that the degree of comparative advantage (disadvantage) in agriculture is a dynamic process with long lags involved between investment and equilibrium trade levels. Protection rates, as normally calculated, may, therefore, be a poor guide to trade effects which may be in the process of expansion or contraction. Secondly, some policy instruments which are intended to have a protective effect may be producing externalities which mask or reduce the trade effect to a large degree. The simplest example is the case of administered pricing for commodities like eggs, poultry and industrial milk in Canada. In these cases output restrictions reduce the trade effect of protection and may actually reverse it.

There are also more subtle effects. It is becoming increasingly clear that the competitive position of some segments of the marketing system has changed as a result of Government authorized group action at the producer level. As examples, Cahill (1982), Quarat-I-Elahi (1982), and Funk and Rice (1978) have found higher marketing or processing margins in the presence of marketing boards for apples, turkeys, broiler chickens, and feed products. In a similar vein, it has been argued by Green (1980) that tariffs afforded agricultural processing industries inhibit the movement towards plants of minimum efficient scale. Both these effects tend to reduce the trade effect of protection. That is to say, the contraction of net exports or the expansion in net imports would be expected to expand less under unilateral free trade than might be expected from a given reduction in the rate of protection.

The analysis presented does not take these postulated processing, distribution and retailing sector effects into account and focuses on the primary agricultural sector. The analysis includes the effect of a range of policy interventions, including tariffs and nontariff barriers, the exchange rate distortion, and direct commodity program expenditures in both the agricultural product and input markets. The trade effect of policies and programs in the primary agricultural sector is estimated from the overall effective rate of protection (appendix B) under three alternative assumptions regarding the contribution of program payments to value added in primary agriculture and two alternative aggregate supply elasticities. In each case, the effective rate of protection is adjusted for output restrictions in the primary agricultural sector resulting from quota policies. As such, these protection rates are not directly comparable with the studies cited earlier which did not account for the exchange rate and quota effects.

Policy Contributions to Value Added. Public expenditures on agricultural programs (Table 4.3) are treated as a contribution to value added and, hence, a potential source of stimulation to domestic output. However, given the breadth of program involvement in agriculture, the most appropriate cut-off point for policies with supply effects is arbitrary to some extent.

Following Brinkman's (1982) classification, the effective rate of protection under scenario A is calculated over the period 1971-80 incorporating Provincial and Federal Government payments through commodity and income stabilization programs alone. Scenario B includes, in addition, the annuity value of Federal crop insurance, producer financing, storage and freight assistance, and trade promotion programs as given in table 4.3. This includes major program expenditures by Government to the railways to maintain service in the presence of Crow's Nest pass rates for grain transportation. These expenditures fall short of the 'Crow gap' as presented by Gilson (1982) and Harvey (1980). Nevertheless, given the monopoly position of the railways and the extent of regulation and intervention in the transport system in Canada, it is not clear that the 'Crow gap' as reported above, reflects transportation costs as they would exist in an unregluated situation (Appendix B). Hence, scenario B measures the change in value added, vis-a-vis an unregulated transport system where the transport tariffs would fall between the existing crow rates and the "variable cost plus 10 percent" rates used to compute the "Crow gap". Scenario C treats the semi-official estimate of the 'Crow gap' as the addition required to raise existing rates to a deregulated transport tariff situation.

Commercial Policies. Tariff and nontariff barriers are incorporated into the analysis to calculate farm cash receipts at border prices as outlined in Appendix B. International price comparisons are used where import quotas support the domestic price. Otherwise tariffs are used to compute border prices.

Quota Adjustments. At various times throughout the last decade, output quotas have restricted production or marketings of milk, grains and oilseeds (designated region), poultry products, and tobacco. For many commodities and provinces, these quotas have assumed market values which can be used to estimate the supply price of the commodity at particular levels of output. These estimates are used to reduce the level of effective protection for the purpose of calculating the trade effect of removing such intervention. Marketing quotas were also in place for a range of fruit and vegetable products in some provinces but in the absence of quota prices no attempt was made to remove their effect. The restrictive effect of fruit and vegetable quotas is thought to be less than for the other commodities due to the looser marketing arrangements and the possibilities for market substitution.

Estimation Results. The unadjusted Effective Rate of Protection (ERP) Coefficients (table B.3) are higher than those estimated in earlier studies for agriculture (table 4.1). Agricultural program costs have expanded rapidly over the decade and a wider array of programs are included in scenarios B and C than were used by Wilkinson and Norrie (1975), or Dauphin and Roma (1975). In 1980, unadjusted rates of producer protection are estimated to be 30, 47, and 55 percent under scenarios A, B, and C, respectively (table B.3).

Table 4.3--Selected agricultural (food) program costs, 1971-76

Item	1971	1972	1973	1974	1975	1976
				Million dollars		
Provincial Government direct payments--commodities	NA	NA	2.1	14.0	49.7	83.0
Federal Government direct payments--commodities	138.6	135.5	161.5	313.5	302.2	326.2
Federal crop insurance	4.0	18.0	21.4	32.7	49.7	56.6
Federal producer financing	23.6	25.6	10.4	8.6	5.9	7.6
Federal storage/freight assistance	103.2	97.8	87.4	164.7	196.2	206.5
Federal trade promotion	11.2	14.3	19.9	28.1	30.9	33.8
Railway subsidies to producers	251.1	276.7	285.2	246.6	237.9	246.8
Subtotal	531.7	567.9	587.9	808.2	872.5	960.5
Federal consumer subsidies	NA	63.2	120.9	155.8	203.2	78.4
Total	531.7	613.1	708.8	964.0	1075.7	1038.9

Continued--

NA = Not Applicable.

Source: Table A.1.

Table 4.3--Selected agricultural (food) program costs, 1977-81--Continued

Item	1977	1978	1979	1980	1981
			Million dollars		
Provincial Government direct payments--commodities	119.2	31.6	9.7	25.5	50.3
Federal Government direct payments--commodities	584.2	374.3	390.5	444.9	NA
Federal crop insurance	73.2	75.6	78.2	102.5	NA
Federal producer financing	6.9	7.7	9.4	14.6	NA
Federal storage/freight assistance	203.8	259.0	340.5	414.7	NA
Federal trade promotion	36.1	42.4	45.4	50.6	NA
Railway subsidies to producers	300.6	279.5	226.7	217.6	NA
Subtotal	1324.0	1063.0	1099.7	1269.9	
Federal consumer subsidies	34.9	44.4	NA	NA	NA
Total	1358.9	1107.4	1099.7	1269.9	NA

NA = Not Applicable.

Source: Table A.1.

Second, quota restrictions are estimated to have had a significant depressing effect on aggregate output (up to 50 percent of the additional value added from programs). The corresponding adjusted rates of protection for 1980 are 11, 26, and 33 percent. The wider margin between adjusted and unadjusted rates under scenario A is due to the high relative importance of dairy program costs in direct commodity expenditures. As can be seen from table 4.4, the bulk of livestock stabilization program costs are associated with the dairy industry. The relative importance of dairy output restrictions then, has a more marked effect in scenario A.

Table 4.4--Government stabilization payments

	Provincial		Federal			Total Federal and Provincial	
	Beef	Hog	Beef	Hog	Dairy	Red meats	Red meats and dairy
	Millions of dollars						
1970-71	--	--	--	--	125.0	--	125.0
1971-72	--	--	--	10.5	109.0	10.5	119.5
1972-73	--	--	--	--	107.4	--	107.4
1973-74	--	--	--	--	143.4	--	143.4
1974-75	16.6	0.1	61.7	--	251.1	78.4	329.5
1975-76	13.6	--	--	--	275.0	13.6	288.6
1976-77	16.5		46.5	--	233.1	63.0	296.1
1977-78	3.3	--	24.5	--	293.6	27.8	321.4
1978-79	3.9	--	--	--	271.5	3.9	275.4
1979-80	41.3	24.2	--	--	279.7	65.5	345.2
1980-81	177.8	19.6	47.1	--	187.9	244.5	532.4
1981-82	1/49.5	1.8	105.5	--	1/299.4	156.8	456.2

Note: Federal payments refer to beef, hog, and dairy stabilization programs for the year in which they were announced.

1/ Estimated.

Source: Agriculture Canada.

The impact of removing intervention in the agricultural sector on the agricultural trade balance is estimated using the framework outlined by the following model:

$$S = f(P_s),\ E_p^S = 0.2 \text{ or } 0.5 \quad (1)$$

$$D = f(P_d),\ E_p^D = 0.25 \quad (2)$$

$$E = f(P_w),\ E_p^E = -5.0 \quad (3)$$

$$\Pi = f(\bar{m} + E),\ E_{m+e}^{\Pi} = -0.5 \quad (4)$$

$$P_s = (1 + t_i)P,\ t_1 = 0.11 \text{ or } 0.26 \text{ or } 0.33 \quad (5)$$

$$P_d = (1 + t_2)P,\ t_2 = 0.10 \quad (6)$$

$$P = P^W \quad (7)$$

$$S = D + E \quad (8)$$

Where: S, D, and E represent output, consumption, and net trade in agricultural products; P_s, P_d, P, P_w represent the price of agricultural products driving producer, consumer, the economy, and world prices; and Π represents the exchange rate in terms of U.S. dollars, t_1 and t_2 are the tariff equivalent protection rates afforded producers and consumers (negative), and m is the nonagricultural trade surplus.

The current producer protection rates (t_1) are taken from table B.3 and adjusted for quota restrictions. The trade effects are estimated using two supply elasticity assumptions. The lower elasticity of 0.2 corresponds to estimates of 0.05 for grains and oilseeds (in the aggregate) obtained by Colman (1980) and 0.3 for all other products. However, the estimated range for other crops and livestock varies from 0.2 to 1.0 (FARM, 1980). Consequently, a higher elasticity of 0.5 is also used. Following Hassan and others (1977), the demand elasticity is held constant at -0.25. Consumer food prices are assumed to fall 10 percent from their 1980 value under free trade based on the difference between farm cash receipts at domestic/border prices (table B.3). Hence, t_2 is set equal to 0.1.

Any reduction in Canada's net trade is likely to be sensitive to changes in world prices. The world market for agricultural products is highly distorted by policy intervention. These factors combined with Canada's trade share and customer loyalties would likely influence world-price levels in the event of a move towards unilateral free trade. World prices would tend to rise slightly offsetting the production fall and consumption rise in Canada and leading to a smaller decline in net trade than would occur in the small country case. This is thought to be especially true for wheat and dairy products where the export demand and import supply facing Canada is relatively inelastic. Overall, the elasticity of net export demand for Canadian agricultural products is assumed to be -5.0.

The terms of trade effect for changes in Canadian trade in wheat, dairy products, and hogs would likely be less elastic than this figure, given the trade shares involved. However, the elasticity for coarse grains, oilseeds (perhaps), and fruit and vegetables is likely to be considerably higher.

The surplus on agricultural trade has represented a high proportion of the overall trade and current account surplus in recent years. In 1980, net trade in agricultural products was over 50 percent of the trade surplus in all commodities. A unilateral move to free trade would have a marked effect on this trade position and in the long run, the exchange rate could be expected to adjust to this change. This effect is also included in the evaluation.

Under all scenarios, a movement to unilateral free trade is estimated to have a major effect on the net trade position of the agricultural sector. From its 1980 value of $2.6 billion, net trade is estimated to fall to at least $2.1 billion and perhaps even as low as $1.2 billion. This adjustment is a result of a reduction in output and producer prices but with only a small increase in the consumption of agricultural products.

The production and consumption adjustment is offset to some extent by a rise in the world price of agricultural products and a devaluation of the Canadian dollar (between 4 and 14 percent after full adjustment). Consequently, in most cases consumer prices fall by less than the tariff equivalent of the 1980 protection level and, in two cases, remain at or above that level.

The commodity composition of the trade adjustment can be judged from Barichello's results presented in table 4.6. Unilateral free-trade would result in a marked change in the production of industrial milk. Net exports are estimated to change from 9.7 million hectolitres to net imports equivalent to 23.0 million hectolitres (assuming an import supply elasticity facing Canada of 0.75). This effect would change the value of total net trade by over $1 billion. The remaining effect would likely occur in the trade of

Table 4.6--Unilateral trade effects, selected agricultural commodities

Item	Industrial milk	Eggs	Broilers	Wheat	Barley	Oilseeds
Net exports	Hectolitres	Dozen	Pounds	------- Tonnes -------		
Actual--						
(1979-81 average)	9.7	-0.6	-47.3	16.8	2.7	1.50
Unilateral free trade	-23.0	0	0	15.9	1.9	1.42

Source: Barichello, R. R., "The Economic Effects of Domestic Protection for Agriculture," paper presented to the U.S.-Canada Trade Consortium Meeting, Washington, D.C., Dec. 1982, appendix A.

fruits and vegetables with perhaps minor change in net trade in beef, grains, and pork. Interestingly, net trade in poultry and egg products is expected to be enhanced by a movement to free trade. This results from restrictive quota policies and internationally competitive supply prices.

In scenarios B and C, an increasing portion of the net trade effect would result from changes in the volume of trade in grains and oilseeds as program contributions to these crops is assumed to be greater.

Other Factors. The foregoing analysis has disregarded a number of elements which would tend to reduce the trade effects estimated above. First, it was argued earlier that some elements of protection in Canadian agriculture have probably lead to lower levels of pricing efficiency in the processing and distribution sector. To the extent these effects are reversible, a movement to unilateral free trade would result in smaller changes in net trade than illustrated.

Second, from a trade policy standpoint, a unilateral adjustment is so unlikely to be contemplated that the trade effects do not closely resemble the outcome of politically feasible options for two reasons. In the first instance a number of protective policies are in place, principally because trading partners adopted similar policies. Furthermore, significant benefits would accrue to foreign suppliers were Canada to unilaterally reduce agricultural protection. Both factors imply that major policy adjustments would likely be the subject of multilateral negotiations of some breadth. In such an environment, the trade effects would be considerably smaller than those estimated in the previous section because the world price effects would be much greater. It has been estimated, for example, that multilateral free trade in dairy products would result in virtually no change in Canada's self-sufficiency in dairy products since the world-price would likely rise to equal the Canadian support level (Lattimore and Weedle, 1981).

Finally, this analysis has been backward looking and as such is not necessarily a good guide to future trade effects of policy changes. Since 1980 there have been a number of policy changes and other changes are likely. Future trade will be affected by the attendant levels of intervention.

Stability Effects--Protective elements of Canadian agricultural policy which tend to insulate the economy from destabilizing forces in the rest of the world tend to be concentrated in the dairy, poultry, and to a lesser extent in the beef industry. Under free trade in these products, Canada would absorb world market shocks concomitant with a market 10 percent the size of the United States. Again, the greatest relative stabilizing effect is likely to be towards the world dairy market, with a lesser stabilizing effect on North American poultry and egg markets and an even smaller beef market effect. However, given policy linkages, (for example, between U.S. and Canadian beef import policies), such qualitative effects would likely depend on the degree of internationally coordinated action.

Remaining Canadian agricultural markets (feed grains, oilseeds, fruit and vegetables, plantation crops, and sugar) are protected only by small specific or ad valorem tariffs which transmit world market fluctuations to the demand side of the domestic economy.

As outlined by Josling (1980), existing agricultural policy makes a contribution to international wheat market stability. He found that Canada's wheat inventory policy tended to be more stabilizing (largest negative price coefficient) than for all other major traders over the period 1968/69 to 1975/76. Using Canadian Wheat Board data, the price elasticity of demand for total wheat stocks in Canada over that period is -0.76[1]. Over the longer period to 1980/81, the elasticity is estimated to be -0.70[1]. This is an important result because over the latter part of the seventies, the grain industry in Canada was concerned with capacity problems in the delivery system and disruptions caused by the partial grain embargo of the USSR. Both concerns could have been expected to divert attention for international market stability during periods of softening markets in 1976/78 and in 1980. However, it appears that the stabilizing role of changing Canadian inventory levels was maintained almost to the same level as in the period to 1975/76.

Summary and Conclusions

The decade of the seventies has been marked by changes in Canada's agricultural trade policy which have flowed from changes in domestic agricultural programs, the general economic and policy environment, and international market instability and policy change. As a result, the level of effective protection afforded agricultural producers has fluctuated widely over the last 10 years but was no higher in 1980 than it was in 1971.

The 1980 trade effect associated with agricultural protection, however, is considerably lower than the level of support would suggest as a result of quantitative restrictions on the marketings of highly protected sectors. Policy changes to unilaterally remove protective elements are estimated to result in a reduction of agricultural net exports from their 1980 level of $2.6 billion to between $1 and $2 billion after full adjustment. The reduction in exports and increase in imports associated with this policy change would impact most heavily on the industrial milk, grains, oilseeds, and fruit and vegetable sectors. Somewhat surprisingly, net imports of poultry and eggs under unilateral protection removal are estimated by Barichello (1982A) to decrease rather than increase. Policy intervention in Canadian agriculture contributes to world market stability, particularly through wheat inventory policy. It probably adds to instability in the world dairy market given the level of intervention of the United States, Western Europe, Japan, and the Nordic countries in dairy product exports. Canada's trade effects in other commodities are probably more marginal in terms of their impact on world agricultural market stability.

The methodology employed in this study is simple and leaves open a number of areas for further study. In particular, it ignores the trade effects of policy supporting much of the food processing, distribution, and retailing sector. Such protection is postulated to support additional oligopsonistic profits in these industries. If this protection were to be removed, the trade effects may tend to reduce or offset those estimated here for the primary sector. Second, the last comprehensive evaluation of protective elements across the Canadian economy was carried out using 1970 data. Policy changes since that time may have had a significant effect on factor shadow prices, which are only marginally incorporated into this study. More work in this area would add considerably to the level of confidence one ought to ascribe to the trade and protection effects estimated here from a general equilibrium standpoint.

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APPENDIX A

Selected Program Costs

Agricultural Sector 1971-80

The following table A.1 includes estimates of the cost of selected transfer payments for the Federal and Provincial Governments and the railways to the agricultural sector through selected programs. The programs include all major Federal direct subsidies through producer and consumer policies impacting upon product and factor markets. However, the only Provincial program expenditures included are those associated with stabilization and farm income assurance programs. It does not include expenditures under social programs, research and extension programs, quality control, and overseas development expenditures which are of a more indirect nature. The cost of the programs included represents around 80 percent of all Federal Government expenditures which are targeted at the agricultural sector and rural community.

The data is adapted from Brinkman (1982) and updated from 1978/79 with data from the Public Accounts of Canada, annual reports of the Agricultural Stabilization Board and Agriculture Canada.

Table A.1--Selected agricultural program costs, 1971-81

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Provincial government direct payments through Commodtiy Programs to producers:	NA	NA	2.1	14.0	49.7	83.0	119.2	31.6	9.7	25.5	50.3
Federal government direct payments through commodity programs to producers:											
Direct milk subsidy	109.0	107.4	143.4	251.1	275.0	233.1	293.6	271.5	261.1	274.1	
Deficiency payments 1/	13.0	11.2	NA	46.5	26.0	28.7	70.5	47.1	30.2	47.8	
Price supports (APB)	0.5	0.4	NA	NA	0.4	1.1	NA	0.3	NA	1.2	
Lift 2/	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grassland incentive	9.8	15.6	16.8	14.9	NA	NA	NA	NA	NA	NA	NA
WGSA 3/	NA	NA	NA	NA	NA	61.8	58.0	53.2	96.1	120.0	
Waterfowl compensation	0.6	0.9	1.3	1.0	0.8	1.5	2.4	2.1	3.1	1.8	
Writeoff CDC deficit 4/		NA	NA	NA	NA	NA	159.7	NA	NA	NA	NA
Subtotal	138.6	135.5	161.5	313.5	302.2	326.2	584.2	374.3	390.5	444.9	
Federal crop insurance:											
Crop insurance act payments	3.1	4.2	15.2	31.1	48.3	56.5	72.8	75.0	78.0	100.0	
Payments to Quebec	0.9	1.1	1.5	NA	NA	NA	NA	NA	NA	NA	NA
Adverse weather payments	NA	12.8	4.7	1.6	1.4	0.1	0.4	0.6	0.1	2.4	
Subtotal	4.0	18.0	21.4	32.7	49.7	56.6	73.2	75.6	78.2	102.5	
Federal producer financing:											
Farm credit crop loss	8.9	8.4	6.8	4.7	3.5	2.4	1.7	NA	NA	NA	NA
Provincial grants	NA	12.3	2.0	0.8	1.4	2.6	0.4	0.8	NA	NA	
Prairie grain advances	3.5	1.0	1.6	3.1	1.0	2.6	3.5	5.2	6.4	10.0	
Deficits pool	11.2	3.9	NA	NA	NA	NA	1.0	0.8	NA	NA	NA
Advance payments co-ops	NA	NA	NA	NA	NA	NA	0.3	0.9	3.0	4.6	
Subtotal	23.6	25.6	10.4	8.6	5.9	7.6	6.9	7.7	9.4	14.6	
Federal storage and/or freight assistance:											
Feed freight assistance	19.5	21.5	21.1	21.0	18.4	10.4	11.6	14.5	15.0	15.1	
Government elevators 5/	3.1	3.7	4.1	6.4	8.1	7.9	9.4	0.6	NA	NA	NA
Drought relief	NA	0.6	0.8	0.9	NA	NA	NA	0.4	NA	44.1	NA
Storage construction 5/	NA	NA	NA	0.1	0.2	0.3	0.5	0.7	1.0	1.3	
TWRA 6/	25.8	12.8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hopper car purchase 5/	NA	4.6	NA	NA	4.1	20.8	21.0	21.1	21.1	30.4	42.4
CN/CP	NA	1.3	NA	3.4	NA	NA	NA	NA	NA	NA	NA
CWB reserve stocks	NA	NA	NA	1.8	3.2	2.7	3.4	1.8	2.2	NA	NA
Freight equalization	NA	NA	0.1	0.2	0.2	0.7	0.9	1.0	1.1	1.1	
Railways section 272	1.5	6.0	6.0	8.3	13.3	13.8	27.4	29.2	34.7	34.8	
Railways section 258	33.3	22.9	25.2	85.5	108.7	104.4	73.6	110.0	176.8	200.0	
Maritime freight	13.1	13.0	14.1	15.1	16.0	17.1	16.0	15.4)			

— continued

Table A.1--Selected agricultural program costs, 1971-81 -- continued

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
								)	60.5	60.7	
Atlantic freight	6.9	11.4	16.0	21.7	23.7	27.1	29.9	41.3)			
Rapeseed products	NA	NA	NA	NA	NA	0.5	2.5	3.8	3.0	3.0	
Feed freight adjustment	NA	NA	NA	NA	NA	NA	5.0	11.7	9.8	8.9	
Co-op imp. ltd.	NA	NA	NA	NA	NA	NA	0.8	0.8	0.8	0.8	0.8
UCO grain terminal 5/	NA	NA	NA	NA	NA	0.5	0.8	0.8	0.8	0.8	0.8
Boxcar rehabilitation 5/	NA	NA	NA	0.3	0.3	0.3	0.3	0.6	1.4	1.4	1.4
Branchline rehabilitation 5/	NA	NA	NA	NA	NA	NA	0.7	5.3	12.3	12.3	12.3
Subtotal	103.2	97.8	87.4	164.7	196.2	206.5	203.8	259.0	340.5	414.7	
Federal trade promotion:											
Ag. marketing and promotion	8.7	10.1	11.4	13.5	16.4	18.4	20.7	21.6	23.3	25.2	
Rapeseed utilization	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
Grain export credits	2.3	2.1	5.9	11.9	10.1	7.7	7.2	12..4	16.4	19.9	
Grains/oilseeds incentives	NA	0.7	0.3	0.4	0.4	0.6	1.0	0.8	0.5	0.3	
CIGI	NA	NA	0.6	0.4	0.4	0.5	0.6	0.7	0.8	0.8	
Marketing (IT&C)	NA	1.1	1.4	1.6	3.3	5.8	5.8	2.7	4.0	4.0	
Milk promotion	NA	NA	NA	NA	NA	0.5	2.4	3.8	NA	NA	
Subtotal	11.2	14.3	19.9	28.1	30.9	33.8	36.1	42.4	45.4	50.6	
Implicit railway subsidies to producers: CN/CP	251.1	276.7	285.2	246.6	237.9	246.8	300.6	279.5	226.7	217.6	
Federal government subsidies to consumers:											
Two-price wheat	NA	63.2	69.4	81.2	188.7	65.3	21.9	43.8	NA	NA	NA
Subsidies on fluid milk and powder	NA	NA	51.5	74.6	14.5	13.1	13.0	0.6	NA	NA	NA
Subtotal	NA	63.2	120.9	155.8	203.2	78.4	34.9	44.4	NA	NA	NA

1/ Agricultural Products Board.
2/ Lower Inventories for Tomorrow Program.
3/ Western Grains Stabilization Act.
4/ Canadian Dairy Commission.
5/ The annualized value of capital expenditures under this term have been estimated at 10 percent per year.
6/ Temporary Wheat Reserves Act.
7/ Canadian International Grains Institute.

Abbreviations

P - preliminary; E - estimated; n/a - not applicable.

Source: Adapted from Brinkman (1982) and extended on basis of Public Accounts of Canada, Agriculture Canada, personal communications, and Annual Reports of Agricultural Stabilization Board.

APPENDIX B

The Effective Rate of Protection, Canadian Primary Agriculture

There are various measures available to estimate the trade effects of policy. The one chosen in this study is an adaption of the producer (consumer) subsidy equivalent and the effective rate of protection which is used in conjunction with a longrun supply elasticity. The protection index (termed ERP here) is used to measure the difference between resource returns under existing policy and those that would exist in the absence of the current policy set. When ERP coefficients are estimated across all sectors of the economy, the degree of resource pull (or push) on a particular sector can often be assessed without including computations of exchange rate and factor market distortions. This is because the mean and variance of sectoral rates of effective protection provide a basing point for the assessment of relative resource pulls.

However, when the effective rate of protection is computed (as is done here) for a single sector, a fuller accounting of distortions impinging on the sector needs to be accounted for. Hence, the ERP calculations include government and other sectors (other than primary agriculture) contribution to current value added in agriculture and exchange rate distortions in addition to the effects of tariffs and nontariff barriers specific to the agricultural sector.

The ERP estimates are also adjusted for output restraints arising from quota policies. These restrictions appear to constrain resource inflows into some agricultural subsectors. As a result, the trade effect of a change in value added to the sector can be expected to be less than would otherwise be the case. This piece-meal approach is less satisfactory from a technical standpoint than a general equilibrium model (see Corbo and Havrylyshyn 1980 for an excellent summary of this literature).

The effective rate of protection (ERP) for the primary agricultural sector over the period 1971-80 is calculated according to equation B.1. Since, the objective is to use the ERP to estimate changes in trade that would result from changes in domestic and trade policies on the performance of the agricultural sector, value added is adjusted for tariffs, nontariff barriers, and quantitative restrictions on the output of dairy products, grains and oilseeds, tobacco, eggs, broilers and turkeys, the degree of structural overvaluation of the exchange rate, and the provision of direct Government and private sector contributions

$$ERP = \frac{VA^d - AVQ - VA^b}{VA^b} \qquad \ldots\ldots\ldots\ldots \text{B.1}$$

Where VA = value added, AVQ = annual value of quota, and b and d represent border and domestic prices. Value added in primary agriculture at domestic prices (VA^d) is defined as the gross value of output at producer prices including direct commodity and income-stabilization payments form the Federal and Provincial Governments (farm cash receipts) less the private costs of purchased farm inputs at domestic prices. Value added at border prices (VA^b) is the gross value of farm output at border values (excluding program

payments), plus the difference between the social and private value of farm exports, less the social costs of purchased domestic and imported inputs paid by farmers, Governments, and the rest of the private sector. This computation is given by equation B.2.

$$VA^b = (P^b.Q^T - p^b.X^T)\ (1 + \Pi^P) - X^g \qquad .....B.2.$$

where Q^T represents the volume of total output;
X^T represents the volume of total inputs;
p^b represents border prices at the market exchange rate;
and Π^P represents the social premium on foreign exchange;
X^g represents the value of Government and other sector inputs.

The degree of trade distortion of policies and programs which is redundant as a result of quantitative output restrictions is measured by the annualized value of quotas (AVQ). AVQ measures the extent to which VA^d overstates the output inducing effects of policies and programs.

Border Values (P^b)

These border-price adjustments take no account of the influence of Canada's trade on world prices. The terms of trade effect will be incorporated later. The border value of agricultural output is computed by applying ratios of the border/domestic farm-gate equivalent prices (Table B.1) to the value of output

Table B.1--Price ratios, border/domestic, 1971-80

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Dairy	0.66	0.95	0.96	0.75	0.51	0.43	0.44	0.53	0.50	0.51
Eggs	1.27	.81	.80	.89	.82	.82	.85	.86	.86	.88
Broiler chicken	.63	.60	.67	.62	.75	.67	.72	.82	.78	.80
Wheat	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Oats	.92	.92	.95	.97	.97	.97	.96	.96	.96	.97
Barley	.93	.92	.95	.97	.97	.97	.97	.96	.97	.97
Oilseeds	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Other crops	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9
Cattle and calves	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Hogs	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
All others	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Source: See text.

at domestic prices. The value of output at domestic prices is taken from Statistics Canada (1982). Border prices are equated to domestic prices for wheat 2/, oilseeds, cattle, hogs, and miscellaneous agricultural products. Domestic prices for some of these commodities have diverged from border values for short periods (for example, cattle in 1976/77 around the time of the Diethylstilbestrol ban) but were deemed to be small overall. The dairy price ratio is calculated by comparing the Canadian farm-gate price of industrial milk with the equivalent price of international traded butter and skim-milk powder at the border, adjusted for Canadian dairy processing margins presented by the Canadian Dairy Commission (CDC, 1981).

The broiler- and egg-price ratios are computed from the average farm-gate prices in the U.S. (Agricultural Statistics, 1981). The price ratios for barley and oats are obtained by subtracting the corn tariff of 8 cents/bushel till 1979 and 7.6 cents/bushel in 1980. Other crops include main fruits and vegetable tariffs (in-season) of 15 percent, fruit tariffs of 10 percent, and lower or zero tariffs on other components.

Border prices for purchased inputs were computed by deducting the nominal tariff and nontariff protection afforded these commodities over the period. These estimates are given in table B.2.

Table B.2--Tariff and nontariff protection of farm inputs

Item	Tariff and nontariff protection
	Percent ad valorem equivalent
Fertilizer	9.0
Pesticides	9.0
Other crop expenses	11.8
Feed	4.0
Other livestock expenses	11.8

Source: Adapted from rates given in Economic Council of Canada, Looking Outward, Ottawa, 1975.

2/ Given that implicit Crow Rate transportation subsidies are treated as cost adjustments.

Government and Other Sector Inputs (X_8)

The value of Government and other sector inputs into value added in primary agriculture is taken as the sum of direct Government program payments, and Government contributions to crop insurance, producer financing, storage and freight programs, and trade promotion. It also includes estimates of the cost of grain and oilseed transportation paid implicitly by the railways. These categories are defined for the most part by Brinkman (1982), and the estimated values have been adapted and extended from that source and are given in table A.1 and summarized in table 4.3.

Government programs which contribute to primary agriculture and rural program objectives are more extensive than those given here by approximately 20-30 percent of the total value. However, the excluded programs tend to have a noncontemporaneous or indirect impact on value added in agriculture and are hence not relevant in estimating the current trade effect. Some of the Government program expenditures refer to capital costs. Where possible, these costs have been annualized by taking an annuity value to measure their current impact.

Three levels of program expenditures are used to calculate effective protection for estimating the trade effect. Scenario A includes Provincial and Federal commodity program expenditures. These are categories 1 and 2 from table A.1. Scenario B incorporates categories 1-6 from table A.1. These are all major direct Government expenditures in agriculture, including contributions to the railways in compensation for the perceived loss in revenues associated with Crow freight rates on grain. Under scenario B, it is implicitly assumed that the Crow rates plus the annualized value of Government contributions to the railways approximates the equilibrium grain transportation rates that would prevail under a deregulated transport policy. In 1980 costs, deregulated grain transport costs in scenario B are implicitly taken as an average of $14/tonne of grain, comprising $5 of private costs at "Crow" (Harvey, 1981) and an equivalent of $9/tonne through Government contributions.

In scenario C, equilibrium deregulated transport costs are taken at their "semi-official" value of $22/tonne (Gilson, 1982) for 1980, which is the basis of the estimated "Crow benefit" to producers (or Crow gap to the railways and governments) amounting to $469.5 million. Under this scenario, the annual transportation subsidy is taken as $469.5 million in 1980 and reduced by 5 percent per year to $295.9 million in 1971. The railway contribution is taken as this total "Crow benefit" less the annual value of Government contributions to the railways from category 5 of table A.1.

The transport subsidy to producers included in scenario C may tend to overstate the long-run equilibrium subsidy that would exist under a deregulated transport system. The basis for this hypothesis is that the "semi-official" rail cost figure of $22/tonne is based upon estimates of railway variable costs plus a 10 percent return on investment. Such a procedure may overstate controllable variable costs of the railways, plus a contribution by grain producers to other costs concomitant with the relative elasticity of demand for railway transport service (Breimyer, (1977). First, the return on capital is based on cost consideration and there is no necessity for this cost to reflect the demand pattern for railway services. Second, it is not clear what length of production run is used to define variable costs. In short, there would appear to be sufficient uncertainty regarding the

economics basis for the computation of the 'Crow gap' to use a second lower estimate of unconstrained transport tariff based on the long history of negotiations between governments and the railways. Scenario B is designed to approximate this latter viewpoint.

Shadow Price of Foreign Exchange

The difference between the private and shadow cost of foreign exchange is assumed to have remained constant over the period and is taken to be 7 percent as estimated by Jenkins and Kuo (1982).

Effective Rate of Protection (ERP)

The results of the ERP estimation are given in table B.3. Rows 1 and 3 present the value of gross output and purchased inputs taken from Statistics

Table B.3--Ratio of farmgate/border values, agricultural products

Item	Farmgate value border value 1/
Grains	0.90
Grain products	.34
Animal feeds	.70
Oilseeds	.90
Oilseed products	.70
Live animals	1.00
Meat	.61
Other animal products	.61
Dairy products	.60
Poultry and eggs	.64
Fruits and nuts	.50
Vegetables (excluding potatoes)	.50
Potatoes	.90
Seeds	.90
Maple products	.50
Sugar	.00
Tobacco	.70
Vegetable fibres	.50
Plantation crops	.00
Other agricultural products	.70
	.81

1/ These ratios were derived from marketing bill estimates in Kulshreshtha, S. N., Calvin Kelly, and Brent Swallow, "Estimation of the Canadian Food Marketing Bill, 1976-78," working paper Agriculture Canada, September 1981. Where estimates were not available from this source they were interpolated from similar products (value added form).

Canada (1982). Purchased inputs are defined here as the total costs of inputs and depreciation less wages paid, rent, taxes, and interest payments. Rows 2 and 4 are the corresponding totals at border prices (that is, net of tariffs and nontariff barriers on the commodities). The additional social returns and costs associated with primary agricultural trade is given in rows 8 and 9. Government contributions to the value of agricultural output are given in rows 5-7.

Value added at domestic prices is then row 1 less row 3. Value added at border prices is row 2, plus row 8, less rows 4, 5, (or 6 or 7), and 9.

Effective rate of protection coefficients, unadjusted for quantitative restrictions, are given for the three scenarios of differing levels of Government and railway contributions in the final rows.

Adjusted Effective Rate of Protection

The effective rates of protection presented in table B.5 are adjusted in this section for output or marketing restraints in existence during 1980. Brinkman (1982) estimated the total capital value of quotas in tobacco, dairy, poultry, and egg production at $2.043 billion in mid-1978. Assuming a 5 percent per year increase, quota values for these commodities are estimated to have been $2.25 billion in 1980. Barichello (1982) has concluded that quota purchasers for these commodities in Canada behave as if they expect a 4-year payback at a 3-percent real interest rate. On this basis, the annual value of these quotas in 1980 would have been $753 million. In other words, $753 million of value added from the production of these commodities was required to hold quotas and was not a stimulus to higher output and trade.

The output restraining effects of delivery quotas for CWB grains and other crops in the designated region is considered to be important but is not revealed as explicit quota prices. The implicit value of these quotas during the last decade is estimated here by comparing the difference between board and nonboard grain prices in years when quotas were restrictive and when they were less or nonrestrictive. The period 1976-80 is taken as typical. The underlying computation is given in table B.4.

Table B.4--Imported Cost Adjustment Factors

Commodity	Factor (%)
Machinery expenses	0.45
Fertilizer	0.22
Pesticides	0.36
Other crop inputs	0.00
Feed	0.06
Other livestock inputs	0.00
Building Repairs	0.00
Electricity and telephone	0.00
Depreciation	0.22

Source: Adopted from self-sufficiency ratios implicit in The Input/Output Structure of the Canadian Economy, Statistics Canada Cat. 15-506E, various issues.

Treating 1975/76 and 1976/77 as open quota years, the average value of delivery restrictions over the 5-year period is estimated at $7.16/tonne in 1980 prices. Then, conservatively assuming that these quota values applied only to wheat, the average annual value of delivery quotas is estimated at $143 million/year. This value is added to the annual value of dairy, tobacco, and poultry quotas to give the total annual value of quotas used in equation B.1. The resulting estimates of the adjusted effective rate of protection are given in Table 4.5.

Table 4.5--Effect of unilateral free trade, Canadian agriculture

Item	Output	Agricultural consumption $1980B	Net trade	Producer	Consumer Index	World	Exchange rate C$/US$ 5 Change
Existing policy, 1980	19.9	17.3	2.6	111-133	110	85	—
Unilateral free trade:							
Low-supply elasticity—							
Scenario A	19.7	17.5	2.1	104	104	88	4.2
Scenario B	19.3	17.4	1.8	106	106	90	6.8
Scenario C	19.1	17.4	1.7	107	107	91	8.5
High-supply elasticity--:							
Scenario A	19.4	17.5	1.9	106	106	89	5.9
Scenario B	18.7	17.3	1.4	110	110	93	11.9
Scenario C	18.4	17.2	1.2	112	112	94	13.6

1/ Calculated at wholesale market or international trade prices.
2/ Under scenario A the producer price index is 111, Scenario B, 126 and Scenario C, 133. These indices are equivalent to adjusted rates of producer protection of 11, 26 and 33 percent from 1980.
3/ The elasticity of the exchagne rate (long run) with respect to a change in the trade balance is taken as -0.5.
4/ Low agricultural supply elasticity taken as 0.2.
5/ High agricultural supply elasticity taken as 0.5.
6/ The aggregate world demand elasticity for Canadian agricultural products is taken as -5.0.

Adjustment to Trade Price

The analysis of the trade and other effects given in the text is performed at prices approximating the market level which corresponds to international trade in agricultural products. To achieve this, the value of agricultural output is adjusted by the reciprocal of the weighted average ratio of farmgate/border values given in table B.5.

Table B.5--Effective rate of producer protection, Canadian Agriculture 1971-80 (unadjusted)

	1971	1972	1973	1974	1975
			--$Millions, current--		
Farm Cash Receipts					
Domestic prices	4541	5510	6968	9011	10057
Border prices	4067	5047	6430	8129	8819
Farm Value Exports	1598	1723	2147	3164	3230
Total Purchased Imports					
Domestic prices	2594	2852	3464	4305	4921
Border prices	2501	2705	3274	4073	4661
Imported Input Cost	455	488	570	704	837
Gov't and Other Input Cost (C)	532	568	588	808	873
Export Value Adjustment	112	121	150	221	226
Imported Input Cost Adjustment	32	34	40	49	58
Value-Added					
Domestic prices	1947	2658	3504	4706	5136
Border prices	1114	1861	2678	3420	3453
Effective Rate (A)	29	16	13	21	29
Protection (B)	43	24	18	28	39
(unadjusted) (C) %	75	43	31	38	49

Footnotes: 1 Scenarios A,B,C,, see text.

Continued--

Table B.5--Effective rate of producer protection, Canadian Agriculture 1971-80 (unadjusted)--Continued

	1976	1977	1978	1979	1980
	--$Millions, current--				
Farm Cash Receipts					
Domestic prices	10088	10212	12040	14283	15665
Border prices	8680	8768	10694	12720	13963
Farm Value Exports	3231	3410	3815	4798	6302
Total Purchased Imports					
Domestic prices	5578	5922	6917	8159	9336
Border prices	5368	5702	6643	7823	8956
Imported Input Cost	1004	1077	1237	1447	1658
Gov't and Other Input Cost (C)	961	1324	1063	1100	1270
Export Value Adjustment	226	239	267	336	441
Imported Input Cost Adjustment	70	75	86	101	116
Value-Added					
Domestic prices	4510	4290	5123	6124	6329
Border prices	2507	1906	3169	4032	4062
Effective Rate (A)	47	70	34	29	30
Protection (B)	64	94	49	44	48
(unadjusted) (C)	80	125	62	52	56
%					

Footnotes: 1 Scenarios A,B,C,, see text.

APPENDIX C

Selected Commerical Agreements of Agricultural Significance in Force Between Canada and Other Countries, November 1982

Date	Title and Place	In Force	Reference
ALGERIA			
1976, May 27	Long Term and Commercial Agreement between Canada and Algeria (Algiers)	May 27, 1976	CTS 1976/23
AUSTRALIA			
1960, Feb. 12	Trade Agreement between Canada and Australia (Canberra)	June 30, 1960	UNTS 369/89 CTS 1960/9 ATS 1960/5
1973, Oct. 25	Exchange of Letters between Canada and Australia constituting an Agreement modifying the Trade Agreement of Feb. 12, 1960. (Ottawa and Canberra)	Oct. 25, 1973	CTS 1973/34 ATS 1973/28
BRAZIL			
1980, Jan. 10	Long Term Wheat Agreement between Canada and Brazil	Jan. 10, 1980 w/effect. Jan. 1, 1980	
FRANCE			
1969, Apr. 3	Exchange of Notes between Canada and France concerning the construction, maintenance and operation of cattle quarantine station on the Territory of St. Pierre and Miquelon (Ottawa).	Apr. 3, 1969	CTS 1969/10 UNTS 733/291
NEW ZEALAND			
1932, Apr. 23	Trade Agreement between Canada and New Zealand (Ottawa and Wellington)	May 24, 1932 (Successively extended and finally on Sept. 25/41 for an indef-inite period)	CTS 1932/2 CTS 1941/12

1970, May 13	Protocol amending the Trade Agreement between Canada and New Zealand signed at Ottawa as Wellington on 23 Apr., 1932 as amended (Wellington)	May 31, 1971	CTS 1971/21 NZTS 1970/27
1973, July 26	Exchange of Letters between Canada and New Zealand constituting an Agreement on Rates and Margins of Preference (Ottawa and Wellington)	July 26, 1973 w/effect from Feb. 1, 1973	CTS 1973/30 NZTS 1973/8
PERU			
1970, May 7	Agreement between Canada and Peru relating to the financing for the sale of wheat by Canada (Ottawa)	May 7, 1970	CTS 1970/12
POLAND			
1979, Oct. 4	Long Term Agreement (Grain) between Canada and Poland (Warsaw)	Oct. 4, 1979	
UNITED STATES OF AMERICA			
1941, May 28	Exchange of Notes between Canada and the U.S.A. regarding wheat marketing (Ottawa)	May 28, 1941	CTS 1941/6
UNION OF SOVIET SOCIALIST REPUBLICS			
1981, Sept. 26	Agreement between the Government of Canada and the Government of the Union of the Soviet Socialist Republics on Agricultural Co-operation	Sept. 26, 1981	
BRAZIL			
1982, July 20	Long Term Wheat Agreement between Canada and Brazil	July 20, 1982 eff. Jan. 1, 1983	

November 1982

ABBREVIATIONS:

CTS	Canada Treaty Series (1928 onward), Queen's Printer, Ottawa
BSP	British and Foreign State Papers, London
HBCT	Handbook of British Commercial Treaties, Her Majesty's Stationery Office, London, 1931
HT	Hertslet's Commercial Treaties, London
LNTS	League of Nations Treaty Series
UNTS	United Nations Treaty Series, United Nations, New York
BTS	British Treaty Series, Her Majesty's Stationery Office, London
TIAS	United States Treaties and Other International Acts Series, U.S. Government Printing Office, Washington, D.C.
ATS	Australian Treaty Series, Australian Government Publishing Service Canberra
NZTS	New Zealand Treaty Series, Government Printer, Wellington

The notation "GATT" indicates that the country is a party of the General Agreement on Tariffs and Trade, Geneva, October 30, 1947, (CTS 1947/27, TIAS 1700, UNTS 55/61).

Source: Adapted from Commercial Treaties in Force (mimeo, external affairs) by Agriculture Canada.

TRADE POLICY, COMMERCIAL MARKET RELATIONSHIPS, AND EFFECTS ON WORLD PRICE STABILITY

The European Community

Stefan Tangermann

These are hard times for the Common Agricultural Policy (CAP) of the European Community (EC). Domestically the CAP is under strong pressure, originating mainly from the heavy burden it creates for the Community budget. Part of this burden could be relieved if ways could be found by which certain imports of agricultural products, which add to surpluses on EC markets, could be redressed and if the Community's agricultural exports could be made less costly. However, there is considerable international pressure on the CAP as well, which makes it difficult to adopt these saving measures. It is particularly the United States which, after having treated the EC rather leniently for two decades, seems to have lost patience and begun to zero in on the CAP.

It is both fascinating and awkward to discuss the Community's agricultural trade policy in such times. Much can be said about this topic, but most of it has already been said highly competently by many observers. And, it may be difficult to see the forest of basic problems for trees of current issues. Why not start with a naive question: Does the European Community have an agricultural trade policy at all? Following this appetizer (presented in section 1) we may continue, for hors d'oeuvre, with looking a bit into the orchestration of measures and arrangements affecting the Community's agricultural trade (section 2). After having, then, in section 3, gotten a taste of the effects of the CAP on international market relationships we may still not feel satisfied and choose, for a somewhat more substantial course, to deal with the impact of the EC's agricultural trade on world market instability.

One warning seems in place right at the beginning. The author of the present paper does not happen to belong to those Europeans who tend to defend the CAP against most external (and, indeed, internal) criticism. For a meeting which aims at a comparative view of North American and European policies it might have proved more stimulating and rewarding to invite somebody who fully supports the CAP. The present author would not make a good advocatus diaboli.

The External Face of the CAP: Trade without Policy? It may appear to be nonsense to ask whether the Community has an agricultural trade policy at all. On the face of it, all ingredients of an agricultural trade policy are there in the CAP. A host of measures affecting agricultural imports and exports is perfectly applied; in the framework of international institutions, above all the GATT, EC officials are engaged in agricultural trade negotiations; and the Community is party to a number of bilateral and multilateral agreements concerning agricultural trade. What else is required for an agricultural trade policy?

What would be required for a bundle of measures that deserved to be called a policy would be a concept behind all this, a considered approach, a defined strategy. This would not necessarily have to be a highly consistent approach or a carefully directed strategy, let alone a theoretically sound concept which an economist might dream of. It would suffice that policymakers have some idea, however, vague, of why and how they want to influence matters.

A minimum requirement for what would constitute a policy in these terms is that central variables in the domain considered are viewed, theoretically speaking, as elements of the objective function by policymakers. Thus, the existence of an agricultural trade policy would require that those responsible for running the policy take some interest in how agricultural trade flows and international market conditions develop. It is exactly the failure of the Community's agricultural policymakers to take this interest which raises doubts as to whether the Community has an agricultural trade policy at all.

Outside observers of the CAP have often inferred that one, if not the main, objective of this policy is to make the Community self-sufficient in food. The high level of CAP price support has been attributed to this objective. If this were a true description of European reality, the Community would in fact have an agricultural trade policy, though a rather degenerate and self-defeating one. The Community would in this case take an interest in its agricultural trade, the special interest being that it does not want to have this trade. However, self-sufficiency in food has never really been an objective of the CAP, though on occasions it has been used as a pretext by those lobbying for higher price support. This is best demonstrated by the fact that the Community, which originally was a net importer of most agricultural products and then experienced a steadily growing degree of self-sufficiency, has not really switched to less generous price support, once it had become self-sufficient in individual products. The milk-market regime did not change when the EC grew into a significant net exporter of dairy products, in the sugar-market regime the maximum quota for production covered by price guarantee has been set at around 120 percent of domestic EC consumption, for grains the "production target" as proposed by the Commission, and tentatively agreed by the Council, has been pitched such that net exports from the Community are implied, to give only a few examples. The degree to which the CAP has become more cautious since the EC has emerged as a major agricultural exporter is due not to trade (or rather nontrade, that is, self-sufficiency) considerations but to the financial problems exports have caused for the Community budget.

If self-sufficiency has not really been an objective of the CAP, there may have been other strategies for agricultural trade in the Community. However, it is hard to detect any. It has been stated countless times and has to be repeated here--measures affecting agricultural trade of the Community are essentially nothing more than adjuncts of an agricultural policy which is obsessed with domestic problems. A statement of this type has a certain validity for most countries' agricultural "trade" policies. Agricultural policies in general have often been described as attempts at exporting domestic problems, in particular, adjustment pressure on farmers and agricultural market instability, to other countries. 1/ Yet, the degree to which this applies to individual countries differs. In the EC the predominance of domestic issues over trade considerations is particularly pronounced.

1/ See for example, T. Josling, "International Policies and Programs." In: E. O. Heady and L. R. Whitting (eds.), Externalities in the Transformation of Agriculture: Distribution of Benefits and Costs from Development, Ames, Iowa, 1975; and S. Tangermann, "Hindernisse und Aussichten auf dem Wege zu einer internationalen Agrarpolitik," Quarterly Journal of International Agriculture, Heft 2, 1982.

This would possibly not be too surprising if the EC were esentially an agricultural importer. Importers are often more inward looking. Moreover, though the domestic and international effects of protection do, in principle, not depend on the net trade position of the country concerned, importers are usually more easily forgiven for a certain degree of protectionism than exporters. However, though still importing agricultural products in large quantities, the EC has meanwhile become a significant agricultural exporter, in particular in many products to which market regimes apply, that is, those products which are covered by the CAP. Hence, one might expect that the Community meanwhile takes an interest in world-market developments and tries, at least on its export side, to exert a deliberate influence on trade flows. But, this is hardly the case.

There are many indications which support this view. A few examples must suffice here. In the Community there are only vague ideas about how international markets for agricultural produce operate. What one knows about them is that prices are distorted. This is taken to imply that they are meaningless for Community policies. A minister for agriculture of one of the EC member countries is known for arguing: "There is nothing like a world market price. I have never met anybody who could explain to me what a world market price is. We cannot orientate our policy by world market prices." It seems never to have occurred to this high-level politician that the world-market price is simply the price at which the Community has to import and export agricultural products and that this implies that it is a very important criterion for policy decisions.

This detachment from the international trade scene also means that there is, at least among policymakers, bureaucrats, and farmers, very little information on the actual world-market situation. Very little is done by way of providing outlook on world market developments and gaining insights into prospects for individual products. While, for example, in North America and Oceania outlook conferences are important events on the agricultural calendar and considerable research is devoted to prospects on world markets, activities like this are close to nonexistent in the Community. In discussions on agricultural policy matters it occasionally happens that a farmer springs to his feet and cries: "If only the Government would set our prices free, then our earnings could eventually increase."

The failure to understand the significance of international trade per se is particularly frustrating when it comes to dairy products where Community exports hold some 40 to 60 percent of the World market, which means that the Community should really look at the international scene very carefully. For example, the EC surplus situation is often evaluated in the press, and one feels sometimes also among policymakers, not in terms of quantities to be exported but in terms of the level of intervention stocks. When the "butter mountain" in intervention has happened to come down for a while, because of heavy export subsidization, the press reports that "the butter surplus has disappeared," and many people get the impression that the problem has been solved. Farmers' unions, noting that the Community has a high share in world exports of dairy products, have occasionally requested the Commission to use its "market power" and export at higher prices, ignoring that this would be possible only if the Community would cutback its exports and, hence, its milk production.

If trade as such is not a significant variable for agricultural policymaking in the Community, it still exerts an indirect, though highly effective,

influence on the CAP via the budget. However, this does not say that the nature of this influence is appreciated. Again, the dairy sector provides a striking example. World-market prices for dairy products have been unusually high since 1980. This has allowed major savings in export restitutions for dairy products which have relieved the pressure on the Community budget considerably in 1980, 1981, and, to a lesser degree, in 1982. In the Community, essentially only this budget effect has attracted attention. It was a very significant factor in turning away from the "prudent" price policy of the late seventies and in silencing debates about CAP reform which had become heated before, because of the danger that Community spending could hit the budget ceiling soon. 2/ However, there is little awareness of the fact that this was due mainly to a very special situation on world markets.

It would be overambitious to try and explain this lack of a proper agricultural trade policy in the Community in few words. Some of the member countries take a strong interest in agricultural trade. This is particularly true for the export-oriented countries, like France, the Netherlands, Denmark, and Ireland. For these countries, agricultural exports constitute a major item in their balance of payments. However, this statement contains already one of the major clues for explaining the Community's attitudes, vis-a-vis agricultural trade. For individual member countries their agricultural trade may be very important. But, this is in any case both intra-Community trade and trade with third countries, about which an individual member country is essentially indifferent because the system of Community financing means that what an individual member country earns from agricultural exports or pays for agricultural imports is independent of whether it trades with other member countries or with the rest of the world. In economic terms this says that the shadow price of agricultural products for an individual member country is in any case (close to) the domestic Community price 3/ rather than the world market price.

If world-market prices have so little influence on individual member countries' well-being it is no wonder that nobody takes a keen interest in them. Yet, for the Community as a whole, world markets are very decisive. Agricultural trade of the Community with third countries comes, therefore, close to what could be called a public good for the individual member country. The theory of public goods has long ago explained why governments have to supply these goods. However, in the Community there is no Government in this sense. Major decisions are essentially taken in the Council of Ministers. The Council is a meeting place of national interests, but not a supernational government. Hence, it is little wonder that the public good, "interest in the Community's agricultural trade with third countries," is scarcely supplied in the Community.

2/ See, for example, S. Tangermann, "Financial Pressure on the European Community and its Consequences for the Future of the Common Agricultural Policy," paper prepared for delivery at the 1982 Annual Conference of the Agricultural Economics Society of Ireland, Dublin, October 29, 1982 (to be published).

3/ The actual shadow price is somewhat below the Community price, the difference being the share of the member country in the Community budget for import levies or export restitutions. See, for example, U. Koester, "EG-Agrarpolitik in der Sackgasse," Divergierende nationale Interessen bei der Verwirklichung der EWG-Agrarpolitik, Baden-Baden, 1977.

After having discussed the low importance which, in the Community, has traditionally been attributed to agricultural trade we have to recognize that recently things seem to be changing. The Community considers, and has in part already concluded, agreements regarding its imports of grain substitutes, and the notion of an "active export policy" and of "long-term export contracts" start playing a role in the CAP. These sound like first steps toward the development of an agricultural trade strategy. However, it has very much to do with the orchestration of trade measures under the CAP. The matter is, therefore, best deferred to the next section.

Instruments and Noninstruments, Arrangements, and Nonarrangements

Those who would argue that the Community does have an agricultural trade policy could point at the Community's very intensive use of instruments affecting agricultural trade. It is, in particular, the variable import levy and export restitution system for which the CAP has become notorious, although there are many more countries in the world that use instruments or measures which essentially function in the same way as variable levies and restitutions. There is no doubt that these instruments and other measures, applied under the CAP, have a significant influence on the Community's agricultural trade. However, by their very nature they are domestic, rather than trade-oriented, measures and, therefore, a sign that the Community does not have a trade policy.

Consider the difference between a tariff or an import quota on the one hand and a variable levy on the other. Policymakers deciding on a tariff or a quota explicitly decide to control trade. When making this decision they are forced to think about trade flows and may, also, be led to think about how their trade partners are affected. Variable import levies, on the other hand, are not, as such, decided upon at the political level. It is the threshold price which is politically determined. The actual levy applying in any particular moment is, then, in a purely technical manner calculated as the difference between the threshold and the world-market price. This separation between the decision on the threshold price and the levy calculation tends to make policymakers forget that they effectively decide on trade measures when they fix prices. It is, therefore, little wonder that the EC Council of Ministers for Agriculture in its annual price review considers various domestic variables, above all obviously the farm-income situation and, recently, budget availability, but does not seem to reflect upon the way in which its decisions impinge on trade.

While this general aspect may be of only academic interest, the purely domestic nature of the CAP's specific instrumentation has had at least one decisive practical consequence for the Community's relations with its agricultural trade partners. In all international negotiations about possible limitations or reductions of barriers against agricultural trade, the Community's partners found it difficult, if not impossible, to extract any concessions from the Community because the EC negotiators adamantly claimed that they were not in a position to put domestic policies on the negotiating table. In a way, they were and are right. A tariff or a quota is open to negotiation. It can be bound or relaxed. And, there is at least no technical difficulty to adhere to a committment once it has been made. But, how could an EC negotiator commit the Community to, say, bind certain import levies or export restitution? This would be completely outside the basic system of the CAP.

Imagine the EC would agree not to exceed certain maximum export restitutions for given commodities. Some countries have tried to convince the Community it should enter into such agreements. What would happen if world-market prices dropped below a level which the EC could not, at given CAP intervention prices, reach by help of the maximum export restitutions? Either intervention stocks in the Community would have to grow infinitely, which would be financially, and at some stage even physically, infeasible. Or, the Community would have to drop the idea of fixed intervention prices and let domestic prices go down in parallel with world-market prices. In this latter case, the whole concept of price fixing by the Council of Ministers during the annual price reviews would become obsolete. In European terms it would be completely unthinkable that the Council would be deprived of its right to fix agricultural support prices. Thus, it is only logical if EC representatives in international negotiations claim there is nothing to negotiate about.

Even in less basic cases the EC is in great difficulties. The Community has been accused of violating the GATT code on export subsidies according to which no country should attract more than an equitable share of the world market. In the short run, and--considering domestic, political restrictions against abrupt CAP adjustments--also in the medium run, there is basically little the Community can, within its given system, do if its exports happen to grow out of proportion with the world market. Whatever is supplied to intervention agencies has to be acquired and, at some stage, must be exported.

Looking somewhat more into the details of administering the market regimes, however, one detects more flexibility than this basic textbook analysis would appear to suggest. This is at least true as far as controlling exports in the short run is concerned. While determining import levies by calculating the difference between the threshold price and the lowest offer price for imports is relatively straightforward and does not leave much room for manipulation, setting export restitutions is very much a business of discretionary ad hoc decisions. Contrary to the case of import levies there is no formula according to which export restitutions would have to be fixed. In the regulations establishing the market regimes for individual products, a number of loose criteria for fixing restitutions is set out, like world market prices, the market situation in the Community, and market prospects. However, as there is no formal rule for computing restitutions, the management committees, which are in charge of determining restitutions, have remarkable room for maneuver. This has at least two significant consequences.

First, the amount the Community exports in any given period is rather unpredictable. If the management committee responsible for dairy products, for example, decides that the current butter surplus should, for the time being, be taken on stock rather than exported, it sets export restitutions at such a low level that selling into intervention appears more profitable for the private trade than exporting. It is difficult to find out on what sort of criteria the management committees base these decisions. They may be speculating against the world market on occasions, though not necessarily very successfully. But, they have certainly other criteria in mind as well, which may not at all have to do with the international market situation. For example, intervention buying is cheaper for the Community budget, in a given moment, than exporting because the Community budget bears only the storage cost, while national exchequers have to finance the value of the commodity on stock. As the pure storage cost is usually less than the restitution required for export, the management committees can buy time for the Community budget by intervening now and exporting later. Thus, should the budget look scarce this

year but budget prospects are better for next year, exports can be shifted to next year and vice versa.

Second, the Community can capture any third-country market at any time for its exports if it so desires because export restitutions can be fixed such that any competitor is pushed out of business in this market. This (implicit) possibility of deliberate discrimination between different destinations for EC exports is potentially highly detrimental for competing exporters as it enables the Community to destroy traditional trade relations and marketing channels which, to establish, may have required considerable efforts. Discrimination is made the easier because most products, export restitutions may officially be differentiated among a number of regions of destination, notionally because of differing transport costs.

It is in this context that the notion of an "active export policy," advanced by some export-oriented member countries, above all France, has to be seen. Though it is not completely clear what this relatively recent addition to the CAP jargon is meant to say it appears that its proponents would like to see exports being given preference over intervention buying in general. Means for achieving this could be subsidized export credits, Government support for marketing, etc. Above all, however, an "active export policy" is probably thought to entail fixing comparatively high export restitutions such that the effective market price in the Community, which for surplus commodities now tends to stick to the intervention price level, is eventually raised above this level.

It is questionable whether administering market regimes in this way would already qualify for being called a trade policy. However, closer to a real trade policy would come what currently is discussed in the Community under the heading of "long term export contracts". Here again, it is not completely clear what the commission really had in mind when it, also pushed particularly from the French side, proposed this additional instrument for the CAP. Technically, these contracts would probably be similar to those which, for example, the United States has made with the Soviet Union and China regarding U.S. grain exports to these countries. However, like in these cases, the economic significance of such contracts would remain somewhat clouded as long as their provisions with regard to quantities and prices would retain the unavoidable degree of indefiniteness and even escape clauses. Of course, it can be argued that long-term export contracts at least provide a certain guarantee of access to markets and that they establish an opportunity for better control of export flows in order to avoid undesired events like the "great grain robbery." However, in the case of the Community both aspects would not really appear to be decisive. Given its variable export restitutions the Community will always find it possible to "create" access to markets on an ad hoc basis. And, the CAP market regimes provide means of monitoring trade flows closely.

It is difficult to stifle the suspicion that those lobbying for long-term export contracts in the EC want to take pressure off the CAP. Once the Community has entered into such contracts, they may hope, export quantities covered by them will politically no longer be regarded as annoying surpluses. After all the Community is, then, obliged to supply these quantities. Moreover, it may be possible to take export restitutions related to quantities under contract out of the CAP part of the budget and hide them somewhere else in the Community budget. Similar attempts continue to be made by interested parties with regard to expenditure related to other items, like the sugar

agreement under the Lome Convention, the agreement regarding butter imports from New Zealand, etc.

In any case, long-term export contracts could become a new feature in the CAP's external face, though not necesarily a positive one. A new feature which is already there is restrictions on imports of grain substitutes. The Community and Thailand have recently ratified a "voluntary" self-restraint agreement regarding Thai manioc exports to the EC. Negotiations with Indonesia and other GATT members have led to the tariff on manioc imports from these countries for quantities above a given ceiling (tariff quota). The Commission would, also, like to enter into negotiations with the United States on a similar type of agreement regarding U.S. corn gluten feed exports to the Community. The United States, however, has so far strictly declined to even consider such negotiations.

An evaluation of the Community's actual and potential policy on grain substitutes is less easy than it might appear on the face of it. At the first glance the exporters, subject to quantitative restrictions, appear to lose. However, this is not necessarily the case. The EC import demand for grain substitutes is probably highly price inelastic at prices below those equivalent to domestic EC grain prices. The revenue from sales of grain substitutes on the EC market is, therefore likely to increase if supplies are reduced such that substitute prices approach the equivalent of the EC grain-price level. Whether or not exporters benefit from this depends on whether the quantity restrictions are administered such that exporting countries can attract the rents resulting from the restrictions. Under self-restraint on the side of the exporters it is very likely that rents remain with the exporting countries. If only individual exporters impose self-restraints, however, the size of their rents is, also, determined by supply elasticities of their competitors and by the elasticity of substitution between their export commodity and other grain substitutes. Moreover, it depends on whether or not the EC imposes restrictions on imports of grain substitutes from these competitors too. Hence, the case is not at all clear-cut.

Whether the United States would really lose from a restraint on their exports of corn gluten feed is even less sure. In addition, to the aspect discussed above, one has to consider that fewer imports of grain substitutes into the Community would mean, to a certain extent, more grain (and soybean) imports and/or less grain exports of the EC. The United States, being the dominant grain and soybean exporter, would necessarily benefit on that score.

Looked at from the Community's point of view, an evaluation of different options for policy on grain substitutes is equally difficult. The main political motivation for restrictions on imports of grain substitutes is to save budget expenditure on export restitutions for grains. In this sense, import restrictions for grain substitutes would certainly be effective. Moreover, they may have positive welfare effects as the theory of the second best teaches that distortions of the use of goods are minimized if nominal rates of protection are equalized across commodities. Hence, grain substitutes would have to be made subject to the same relative import duties as grains. 4/ However, restrictions on imports of grain substitutes which are designed such that exporters attract the rents would not have the potential

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4/ One would, however, also have to consider how this changes effective protection of the goods produced out of grain and grain substitutes.

positive welfare effects for the Community. Moreover, the theory of the second best is academic if not naive insofar as it overlooks that the adoption of a second best solution is likely to counteract forces which otherwise might lead to approaching the first best solution. In the case of the CAP this means that adoption of restrictions on substitute imports will reduce the budget pressure which otherwise could have led to a lower level of agricultural protection in general.

But, this, again, is not necessarily clear. The EC commission has tried, in appropriate proposals, to establish a link between restrictions on substitute imports and its objective of adjusting EC grain prices gradually to the level of domestic grain prices in the United States. It is difficult to imagine that it will be successful in convincing the council that it should adhere to this link. The council may agree on further restrictions on substitute imports but refuse to adjust EC grain prices to the U.S. level.

This opens up an interesting opportunity for U.S. negotiators which, it seems, should be seriously considered. The United States and the EC could agree on a quid pro quo deal. The United States could promise to impose a self-restraint on its exports of corn gluten feed if and when the EC commits itself to adjusting its grain prices to the U.S. level in a given period. Leaving the uncertain welfare effects with regard to corn gluten feed aside, the United States should have a strong long-run interest in lower prices in the Community. EC agricultural policymakers, on the other hand, will hardly be inclined to adjust domestic grain prices downward unless this solves an acutely pressing problem. Grain substitutes are a problem for the Community. Cooperation of the United States in solving this problem may be an incentive for the council to accept the commission's proposals for lower EC grain prices.

Solutions like this could potentially lead the Community along the way toward a proper agricultural trade policy. The instrumentation and the philosophy of the CAP would no longer be exclusively domestically oriented but would take relationships between the Community and international markets into account.

World Market Forces and the CAP. Listening to some CAP officials one could believe that the Community pursues one of the most liberal and open agricultural trade policies. They point out that the Community is the largest agricultural importer in the world and that its agricultural imports have grown considerably in the past. However, it is easy to show that statements of this type are essentially a misuse of statistics.

Apart from (some types of) fruits and vegetables the Community is meanwhile self-sufficient or producing surpluses in essentially all major products covered by the CAP. Remaining net imports are, first, in those commodities which could be produced in the Community only at prohibitively high cost or not at all, such as tea, coffee, cocoa, tropical fruits, etc. Second, the Community has remained a large net importer of oilseed and protein feed. Historically, these commodities, also, were too costly to produce in Europe, hence, they were viewed as agricultural inputs or noncompeting outputs, low prices for which were either beneficial or irrelevant for European farmers. EC policymakers, therefore, had few difficulties in agreeing to bind tariffs for these products to zero or low levels. Consequently, imports of these commodities kept growing at relatively high rates. Meanwhile, new production technologies, geographical expansion of the Community, and changing market conditions have tended to increase the capacity and attractiveness of producing these commodities in the Community and one needs not be a prophet to

predict that conflicts between the Community and its traditional suppliers are on the cards. However, for the time being these types of commodities are more or less the only ones where the Community can claim, with a certain justification, that it pursues a relatively liberal policy, potentially against the interests of its own producers.

Apart from these product categories in which the Community has remained a net importer there are commodities of which the Community produces a surplus, but continues to import (in gross terms) considerable amounts. Those imports, of course, add to the high agricultural import bill of the Community. Apart from cases of product differentiation resulting in "intra-industry" trade, as in the case of wheat where the Community exports low and imports high qualities, these gross imports are to a significant extent due to trade preferences which the Community has granted to third countries. Famous examples are imports of sugar and beef from African, Pacific, and Caribbean countries under the Lome Convention and butter imports from New Zealand. In all of these cases the Community has failed to adjust its domestic production to the preferential imports. It is rather, producing surpluses already on the domestic market, such that preferentially treated imports simply add to the quantities which the Community exports. In the case of sugar, for example, the Community produces around 2 million tons (about 20 percent of domestic consumption) more than it consumes, while at the same time it imports 1.3 million tons (at guaranteed domestic EC prices) from developing countries under the Lome Convention, which means that it exports around 3.3 million tons. Gross imports of this type are certainly not a valid indication of the Community's "liberal" agricultural trade policy.

The growing surplus production in the Community tends to be viewed, inside and outside the EC, as a consequence of CAP price support. There is no doubt that this is a correct interpretation in the sense that EC surpluses would be lower (or EC imports higher) if protection of agriculture in the Community would be reduced. However, as long as one is talking about a growing surplus, that is, a change of the market situation over time, one should consider to what extent a change of price support can be made responsible for a change in the surplus. In this dynamic sense the analysis is much less trivial.

In the EC, relatively little research is done regarding the quantitative effects of the CAP on the Community's agricultural trade. The present author is not aware of any study which has tried, on a commodity-by-commodity basis, taking inter-commodity relations into account, to establish time series of the trade effects of the CAP. Hence, by implication, we seem to be, also, lacking knowledge regarding the effects of the CAP on worldwide trade flows and international price levels. Thus, only a few speculations will be offered here.

The CAP could be said to have led to growing distortions of international trade if protection of EC agriculture, vis-a-vis world markets, had increased over time. A thorough analysis of this question would have to start from a time series of rates of protection, both effective and nominal, taking all domestic and trade related measures of the CAP into account. As such a time series is not easily available, a much simpler indicator has to be used here; that is, the ratio between EC entry prices (inclusive of import levies) and world market prices, costs, insurance, and freight at the EC border. There is

no doubt that this is a very inadequate measure of the degree of protection, but given that domestic subsidies are not too important under the CAP, it may indicate at least the direction of changes of the (nominal) rate of protection.

Figures 1 through 4 show the development of this indicator for four selected commodities; that is, wheat, maize, beef, and butter (as a proxy for dairy products in general) from the early times of the common-market regimes to the early eighties. There has obviously been much variability of the price gap between the EC and the world market, due mainly to fluctuations of international prices. CAP prices have been unresponsive to changing world market conditions. The consequences for international instability will be discussed below. Here we are interested in the level of protection. For the commodities included here, CAP protection does, in general, not seem to have increased since 1968. Only in the case of beef protection does it seem to have been slightly higher recently than in the late sixties. Even if one considers that the price gap between the EC and world markets has recently been increasing again, it still does, in general, for the commodities covered here not seem to be above that of the late sixties.

Constant levels of protection, however, do not necessarily indicate that the degree to which the CAP distorts world markets has not changed. As far as the distortion of trade flows is concerned, it is the difference between countries' rates of protection rather than absolute levels of protection which is decisive. It could well be that the EC has kept its rate of protection vis-a-vis the world market, while other countries have lowered their protection. In this case, the degree of distortions resulting from the CAP would have increased.

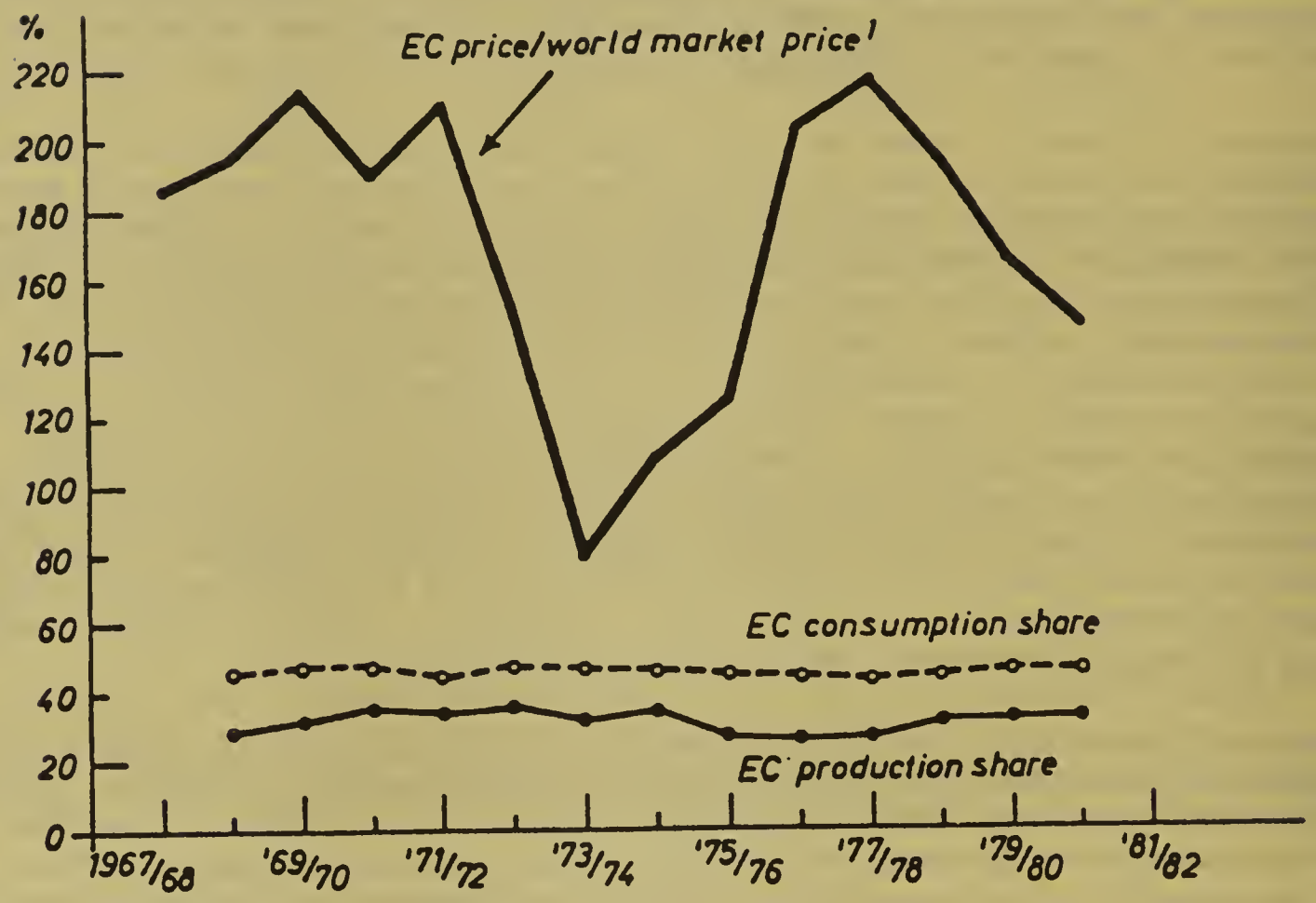
Again, it is not possible here to have recourse to available analyses, and a rough indicator will have to suffice again. Shares of the EC in aggregate developed country production and consumption of the commodities concerned may be used as such an indicator. As long as nonprice influences on production and consumption have not differed too much among countries, a growing protection in the Community, relative to protection in other developed countries, would show up in an increasing EC share of production and a decreasing EC share of consumption. However, from figures 1 to 4 5/, no discernible trend of EC shares in the developed-country aggregates emerges. Again, it is only in the case of beef that the EC's share of developed country production seems to have slightly grown in recent years. Thus, in general, one cannot say that the EC has captured a larger share of developed country production or that it has cutback its consumption in relative terms.

This would seem to be in contrast to the EC's rising surpluses. But, it only says that the EC's surpluses have roughly grown in line with the surpluses of the developed countries on aggregate. This is no excuse for the CAP and it does not at all say that the EC's dumping of agricultural products is not harmful for international trade. But, it puts the role of the Community in

5/ For milk only the EC's share in production is given, because the wide array of dairy products means that there is no easy aggregation into total milk consumption.

Aggregate Production and Consumption of Developed Countries

— Wheat —

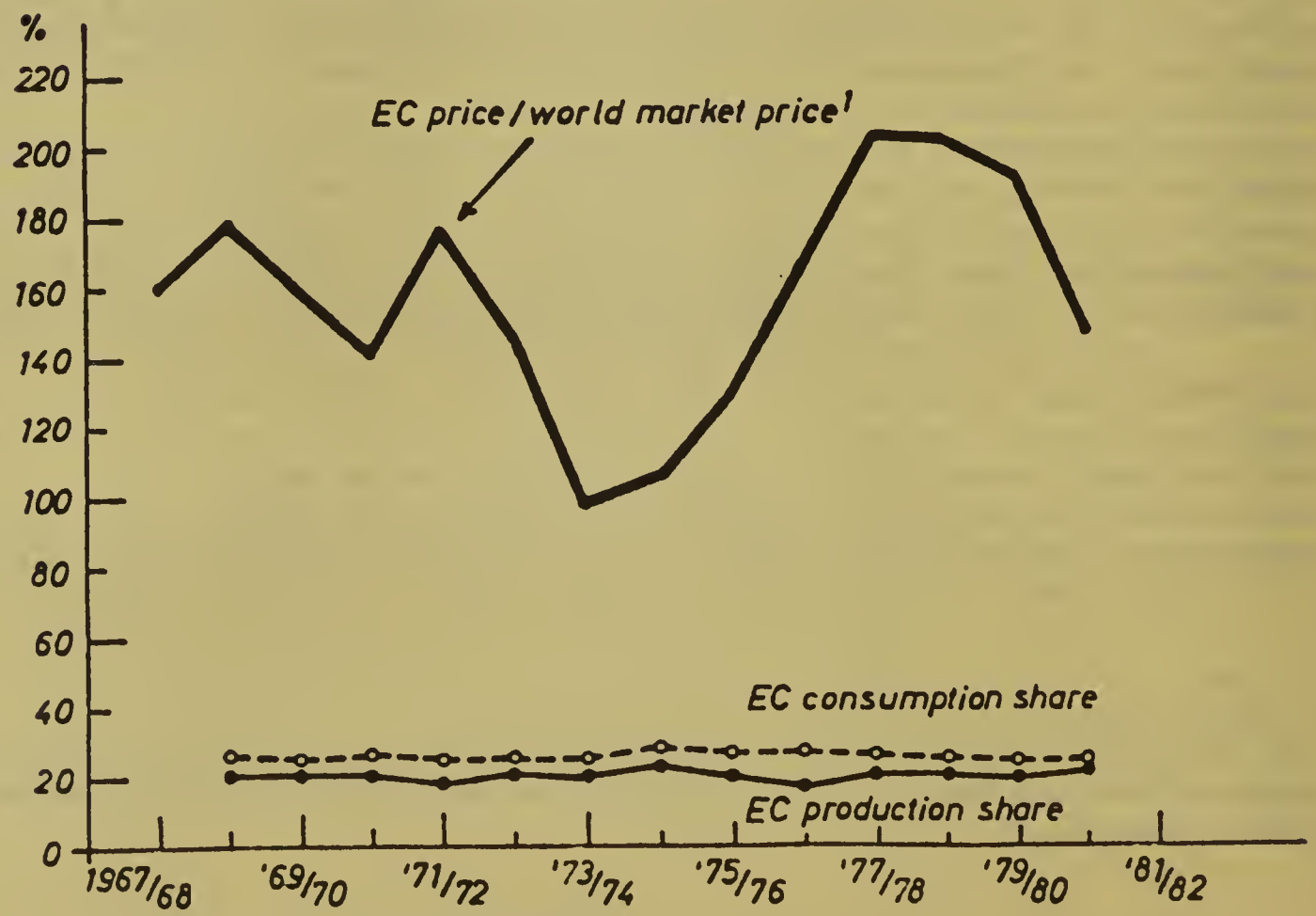


1) Ratio of EC entry price to cif price

Source: EUROSTAT and USDA, World Agricultural Situation

Graph 2: Ratio of EC to World Market Price and Share of EC in Aggregate Production and Consumption of Developed Countries

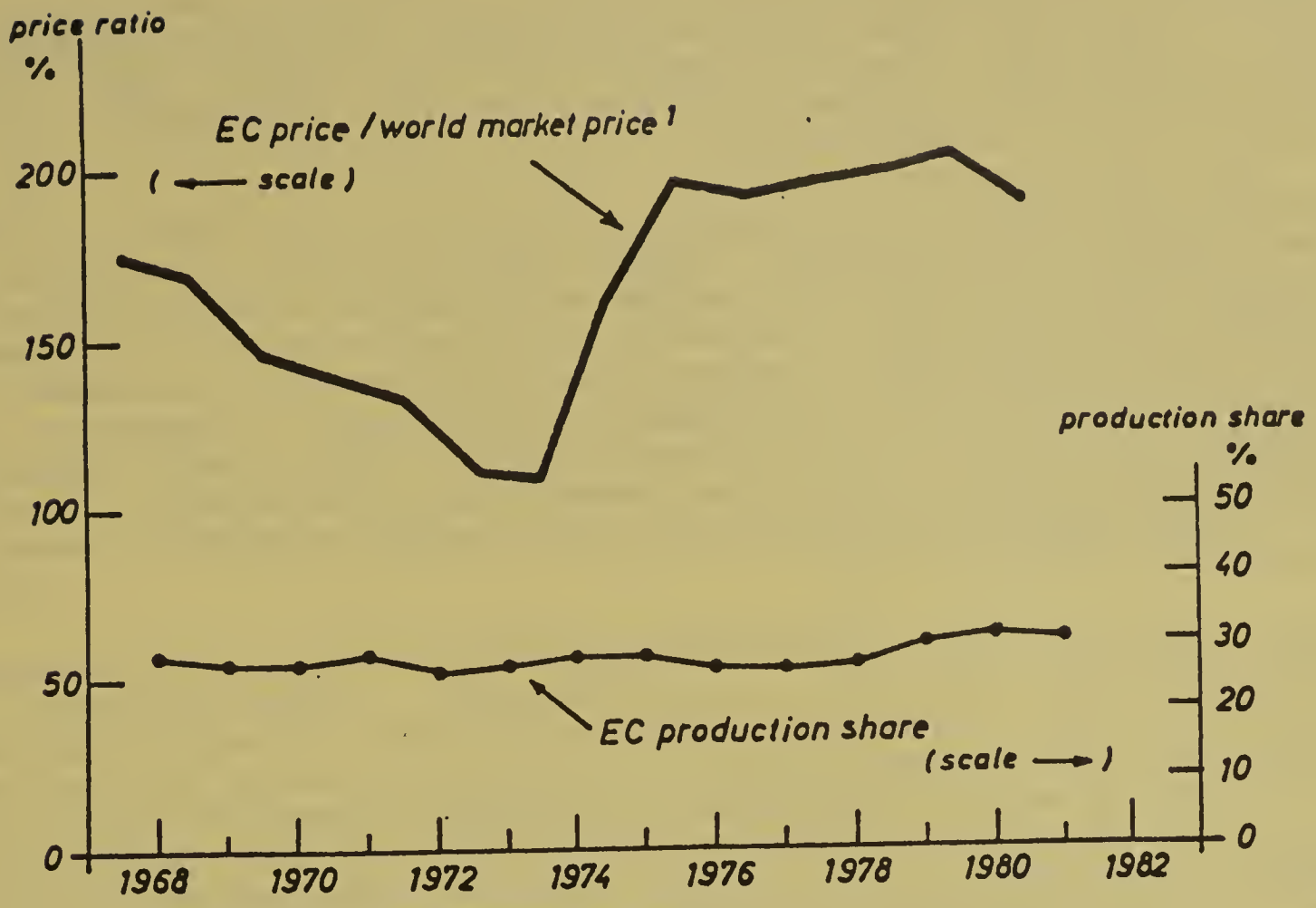
— Coarse Grains —



1) Ratio of EC entry price to cif price

Source: EUROSTAT and USDA, World Agricultural Situation

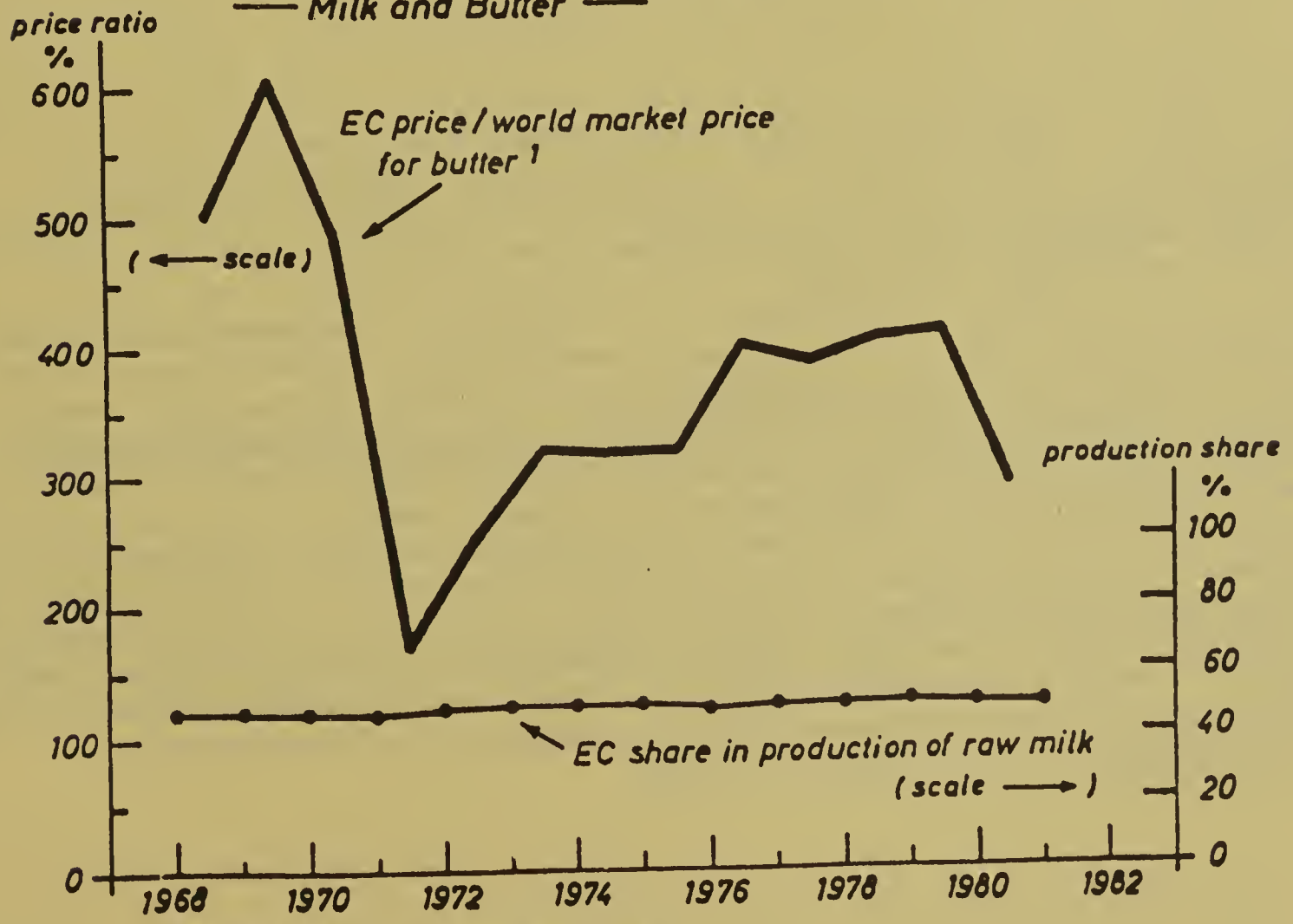
Aggregate Production and Consumption of Developed Countries
— Beef —



1) Ratio of EC entry price to cif price

Source: EUROSTAT and FAO

Graph 4 : Ratio of EC to World Market Price and Share of EC in Aggregate Production of Developed Countries
— Milk and Butter —



1) Ratio of EC entry price to cif price

Source: EUROSTAT and OECD

perspective. As in other developed countries, rising surpluses are not necessarily due to growing levels of protection. They may simply result from rates of technological progress in agriculture which outpace demand growth, even at declining real prices for farm products which the Community has experienced like other countries.

The CAP and World Market Instability: How Bad Is the EC? Since instability on world markets for agricultural products and its relationship with domestic stabilization policies has attracted the attention of economists it has become a conventional wisdom that a variable levy system like that of the Community tends to amplify international price instability because it takes domestic agricultural markets out of the worldwide buffer system. A number of theoretical contributions 6/ have made this point very strongly, and some empirical case studies 7/ have shown, among others, how domestic price stabilization under the CAP has added to world market instability during the crisis of the early seventies.

However, some more recent contributions 8/ have pointed out that the general argument is subject to a number of qualifications. If these assumptions are not fulfilled, the conclusion may change considerably. First, instability transmission between markets depends obviously on whether or not fluctuations on individual markets are correlated. Second, most countries' stabilization policies include storage as one of their elements, and stock changes may counteract or reinforce the instability effects of the country's trade policy measures. Third, domestic markets are not completely stabilized in most cases. The remaining scope for domestic adjustments is bound to affect the instability linkage with the rest of the world. Fourth, in markets with lagged supply response and, therefore, a tendency toward cyclical fluctuations, stabilizing domestic prices and, hence, domestic production may dampen rather than increase international instability.

6/ See for example, M. D. Bale and E. Lutz, "The Effects of Trade Intervention on International Price Instability," American Journal of Agricultural Economics, Vo. 61, 1979, pp. 512-515, and P. Lloyd, "The Effects of Trade Interventions on International Price Instability and National Welfare," mimeograph, May 1980.

7/ See for example, T. Heidhues and D. Hollstein, "Anpassungsmethoden bestimmter Lander oder Landergruppen an wechselnde Knappheitslagen auf den Weltgetreidemarkten," Agrarwirtschaft, Jg. 27 (1978), S. 144-156, and T. Josling, Developed-Country Agricultural Policies and Developing-Country Supplies: The Case of Wheat. International Food Policy Research Institute, Research Report No. 14. Washington, D.C., March 1980.

8/ J. M. DeBois. "EC Policies and Instability on World Commodity Markets," discussion paper, Institute of Agricultural Economics, Gottingen, March 1980; P. M. Schmitz and U. Koester, "The EC Sugar Market Policy and the Stability of World Market Prices for Sugar," paper presented at the Agricultural Trade Consortium Meeting, December 1981; J. V. Schrader, "Interdependenzen zwischen EG-Zuckerpolitik und Preis-oder Mengenschwankungen auf dem Weltmarkt," Agrarwirtschaft, Jg. 31 (1982), S. 6-15.

For each of these qualifications no generalization is possible. The way in which they modify the instability effects of trade policy measures may vary from case to case. Only an empirical analysis of the countries and commodities under consideration can lead to conclusions. Some results of such an analysis for the case of the EC and the commodities wheat, coarse grains, sugar, and beef will be presented here. A few other major countries are included for comparison.

The approach is rather elementary in nature. Essentially, it looks into correlations of various variables' fluctuations in order to find out whether certain instability links have or have not existed. Only quantity variables are used, not prices, because after all instability is transmitted between markets inside and outside the Community via quantities only. Fluctuations are defined as deviations from a linear trend. Observations are annual data for the period 1968/69 to 1980/81. Data are mainly from USDA published statistics.

The analysis starts from the basic identity

(1) $Q^i = C^i + dI^i + T^i$

where Q^i is production; C^i, domestic use; dI^i, stock increase; and T^i, net exports of the commodity considered for country or region i. On the assumption that production is given for a given year, we are mainly interested to see how domestic use, stock change, and trade react to production fluctuations at home and abroad.

Results are presented in tables 1 to 6. The following abbreviations are used: "dev X" is the deviation of variable X from its linear trend; "m(dev X)" is the mean of absolute deviations; "ratio" is the value of parameter b in the fitted regression; dev y = a + b dev X between dev X and dev Y; "correl" is the coefficient of correlation between dev X and dev Y; ** and * denote that the correlation is significant at the 1-percent or 5-percent level of significance, respectively. If symbols do not carry a country index they relate to the country or region given in the column head.

Tables 1 and 2 provide a survey of the magnitude and the sources of production instability for the commodities and countries covered here. Tables 3 to 6 present information concerning instability links between variables (or instability absorption).

Wheat production in the EC is slightly more stable than in the United States and considerably more stable than in the USSR, both in absolute and relative terms (table 1). In the EC, relative fluctuations of yields are 50-percent higher than those of acreage, there is no correlation between yield and acreage fluctuations, and there is no correlation between yield and acreage fluctuations (table 1). It is interesting to note that in the United States, acreage fluctuations are more pronounced than yield instability and that there is a strong negative correlation between acreage and yield fluctuations, which may be due to both natural conditions and policy influences.

Looking at the variability of the absorption variables, that is, the variables on the right-hand side of equation 1, one finds that in the EC wheat consumption is less stable than in the rest of the world (table 2). However, this is no surprise as in the rest of the world many countries' fluctuations may cancel out. More interesting is the comparison with individual third countries which shows that the EC has kept its consumption much more stable than both the United States and the USSR. Stock changes, too, have been much lower in the EC, both in absolute terms and relative to total domestic absorption (C + dI) (table 3). Moreover, the Community's net trade has exhibited comparative stability, too (table 3).

With regard to shifting or sharing the burden of instability between countries it is, firstly, interesting to analyze how countries react to changes of their domestic production. In the case of the EC, it is obvious that production fluctuations have mainly been absorbed by trade variations. Both the coefficient of correlation and the parameter of the regression on domestic production are highest for trade, lower for stock changes, and even lower for consumption in the EC (table 3). This can be taken to say that the EC has tended, to a certain extent, to export its production instability to the rest of the world. Of each ton of production above trend the EC has exported 0.41 tons (table 3). As there has been a positive, though low, correlation between production fluctuations of the EC and those in the rest of the world (table 1) this appears to mean that the EC has tended to aggravate instability in the rest of the world. This could further be indicated by the fact that there has been a relatively strong positive correlation between the EC's exports and exports of the rest of the world (table 3).

Exporting instability of domestic production to the rest of the world could be called active destabilization of world markets. In the case of wheat, the EC appears to have actively destabilized world markets to a certain degree. On the other hand, one could define passive destabilization as the lack of responsiveness of domestic absorption to fluctuations of worldwide production. Implicit in this definition is the idea that a fair sharing of the burden of worldwide instability would require that each country decreases its domestic absorption (proportionately) if world production decreases and vice versa. As far as domestic consumption is concerned, the EC has not participated in this burdensharing (table 3). However, stock changes and, therefore, total domestic absorption in the EC have exhibited a certain positive correlation with world production (table 3). Thus, one cannot say that the EC has featured passive destabilization of the rest of the world in the case of wheat.

The results for the remaining commodities will be summarized in less detail than for wheat. Domestic absorption of coarse grains in the EC was even more stable than that of wheat (see table 4). With regard to the absorption of domestic production fluctuations the EC has, in the case of coarse grains, used trade even more, and both consumption and stock changes considerably less as a buffer, than in the case of wheat. Thus, active destabilization has been clearly more pronounced for coarse grains. On the other hand, there are nearly no signs of a fair burdensharing by the EC in the case of coarse grains, such that passive destabilization has occurred.

In the case of sugar (see table 5) both active and passive destabilization by the EC have been even more pronounced than in the case of coarse grains. Deviations of production from trend have been fully reflected in trade variations and not at all in consumption or stock adjustments. Domestic absorption in the EC has not been responsive to changing worldwide scarcities.

In the case of beef, on the other hand, active destabilization by the EC has been similar to the case of coarse grains. In terms of passive destabilization, however, the record looks even worse than for sugar as there is a negative, though not significant, correlation between domestic absorption in the EC and world production.

There is certainly the danger of over-interpretation of results, like those presented here. In particular, it has to be emphasized that regressions recorded here must not be interpreted as depicting causal relationships. Their only purpose in this case is to show whether and to what degree certain variables have moved in parallel. In a sense this is exactly what one would like to know when one is interested in instability links. However, it should be possible to draw some tentative conclusions.

The theoretical hypothesis that the Community's system of variable import levies and export restitutions tends to destabilize the rest of the world is not refuted by the empirical evidence presented here. However, there are marked differences between commodities. For wheat, the Community's record looks less bad than for coarse grains, and in both sugar and beef the Community's behavior has been more detrimental for the rest of the world than in grains. An explanation of these commodity differences would require much closer inspection than has been possible here. However, at least for the different performance of wheat and coarse grains an observation can be offered.

In wheat, the Community is a net exporter. Intervention buying in order to remove the surplus production from the domestic market therefore plays an important role in the EC wheat economy. Hence, stock changes tend to reflect domestic production fluctuations. Exporting out of stocks, on the other hand, can, at least in principle, take the market situation in the rest of the world into account. In coarse grains, however, the Community has a deficit. Intervention buying, and, therefore, stock changes play a less important role than for wheat. The volume of imports reacts immediately to domestic production changes, independently of the situation in the rest of the world. Another look at the numbers in tables 3 and 4 confirms that it is essentially the different behavior of stock changes which entails that wheat is less bad, both in terms of active and passive destabilization, than coarse grains. This seems to suggest that storage policies have to be given more prominence in analyses of the instability effects of individual countries' agricultural trade policies.

Table 1--Variability of grain and sugar production in the EC and selected countries, 1968/69 - 1980/81

	Dimension	EC	Rest of world	United States	USSR	Cuba	World total
Wheat:							
Mean deviation	Million tons	2.64	14.83	3.13	9.76	--	15.53
Mean production	Million tons	42.30	330.02	49.41	93.42	--	372.32
Mean relative deviation [1/2]	Percent	6.25	4.49	6.34	10.44	--	4.17
Correlation of deviation with EC	--	1	.22	.18	.27	--	.39
Ratio of mean relative deviations of yield and acreage	--	1.50	1.92	.48	3.45	--	1.83
Correlation yield-acreage deviation	--	.00	-.10	-.67	.12	--	-.12
Coarse grains:							
Mean deviation	Million tons	2.55	17.18	12.68	11.80	--	17.27
Mean production	Million tons	61.82	593.58	185.92	84.26	--	655.39
Mean relative deviation [1/2]	Percent	4.12	2.89	6.82	14.00	--	2.63
Correlation of deviation with EC		1	-.03	.29	-.26	--	.14
Ratio of mean relative deviations of yield and acreage		3.51	2.26	1.90	2.37	--	2.19
Correlation of yield-acreage deviation		-.13	-.31	-.76	.18	--	-.36
Sugar:							
Mean deviation	Million tons	.45	2.52	.29	.65	.65	2.56
Mean production	Million tons	10.61	69.15	5.66	8.38	6.30	79.76
Mean relative deviation [1/2]	Percent	4.24	3.65	5.08	7.70	10.27	3.21
Correlation of deviation with EC		1	-.06	-.26	.42	.13	.11
Ratio of mean relative deviations of yield and acreage		1.74	.87	.94	5.41	1.98	.75
Correlation of yield-acreage deviation		-.10	.63	-.73	-.07	-.33	33

Table 2--Variability of beef production in the EC and selected countries, 1968/69 - 1980/81

Dimension	EC	Rest of world	United States	USSR
Mean deviation	Million tons	.23	1.24	.62	.23
Mean production	Million tons	6.32	31.76	10.60	6.00
Mean relative deviation [1/2]	Percent	3.66	3.90	5.83	3.82
Correlation of deviation: with EC		1	.05	.06	.15

• Continued--

Table 2--Variability of beef production in the EC and selected countries, 1968/69 - 1980/81--Continued

	Dimension	Australia	Argentina	New Zealand	World total
Mean deviation	Million tons	.27	.23	.04	1.27
Mean production	Million tons	2.64	1.51	.47	38.08
Mean relative deviation [1/2]	Percent	10.20	14.92	8.79	3.33
Correlation of deviation: with EC		.00	-.26	-.08	.23

Table 3--Variability of grain and sugar production in the EC and selected countries, 1968/69 - 1980/81

Item	Dimension	EC	Rest of world	United States	USSR	World total
m(dev C)/m(C)	Percent	3.10	2.63	4.93	4.98	2.55
m(dev dI)	Million tons	1.89	14.33	5.06	8.80	15.15
m(dev dI)/m(C+dI)	Percent	4.54	4.33	23.15	9.09	4.06
m(dev C+dI)/m(C+dI)	Percent	4.88	4.42	22.73	9.43	4.17
m(dev T)	Million tons	1.55	1.55	3.00	3.60	1/ 3.93
m(dev T)/m(C+dT)	Percent	3.73	.46	13.72	3.72	1.05
ratio (correl) between dev Q and dev C		.19 (.43)	.23 (.34)	-.13 (-.40)	.20 (.40)	.23 (.36)
and dev dI		.38 (.52)	.75 (.75)	1.23 (.81)	.60 (.76)	.75 (.76**)
and dev T		.41 (.68)	.01 (.12)	-.10 (-.11)	.18 (.48)	1/ -.10 (-.39)
ratio (correl) between dev Q^{world} and dev C		-.002 (-.03)	.24 (.38)	.01 (.20)	.001 (.000)	.24 (.36)
and dev dI		.07 (.55*)	.63 (.72)	.01 (.05)	.44 (.81)	.75 (.76**)
and dev (C+dI)		.07 (.54*)	.92 (.99**)	.03 (.10)	.44 (.72**)	1 (1)

ratio (correl)	between dev T^{EC} and dev rest of world exports	1.90 (.63*)
ratio	between dev T^{EC} and dev rest of world production	-1.09 (- .12)

1/ World exports.

Table 4--Coarse grains--Domestic and worldwide instability absorption, EC and selected countries--1968/69-1980/81

Item	Dimension	EC	Rest of world	United States	USSR	World total
m(dev C)/m(C)	Percent	2.08	2.17	6.51	9.12	2.01
m(dev dI)	Million tons	1.08	9.24	9.02	1.98	8.55
m(dev dI)/m(C+di)	Percent	1.46	1.58	6.27	2.17	1.30
m(dev C+dI)/m(C+dI)	Percent	2.49	2.90	7.55	10.05	2.63
m(dev T)	Million tons	2.32	2.32	3.12	2.55 1/	2.53
m(dev T)/m(C+dT)	Percent	3.14	.39	2.16	2.79	.38
ratio (correl) between dev Q^i and dev C		.10 (.17)	.64 (.79**)	.51 (-.74**)	.67 (.96**)	.72 (.86**)
and dev dI		.20 (.49*)	.31 (.58*)	.35 (.53*)	.10 (.59*)	.27 (.54*)
and dev T		.69 (.80)	.03 (.23)	.13 (.57*)	.19 1/ (.77**)	.03 (.21)
ratio (correl) between dev Q^{world} and dev C		.03 (.38)	.68 (.84**)	.28 (.51*)	.26 (.55)	.72 (.86**)
and dev dI		.00 (.00)	.27 (.51*)	.24 (.47)	.02 (.23)	.27 (.54*)
and dev (C+dI)		.03 (.37)	.96 (.99**)	.53 (.76**)	.29 (.54*)	1 (1)

ratio (correl)	between dev T^{EC} and dev rest of world exports	.90 (.69**)
ratio	between dev T^{EC} and dev rest of world production	-1.504 (- .23)

1/ World exports.

Table 5--Sugar: Domestic and worldwide instability absorption, EC and selected countries, 1968/69 - 1980/81

Item	Dimension	EC	Rest of world	United States	USSR	Cuba	World total
m(dev C)/m(C)	Percent	2.34	2.00	3.77	1.96	11.22	1.90
m(dev dI)	Million tons	0.36	1.90	.27	.37	.32	2.10
m(dev dI)/m(C+di)	Percent	3.34	2.74	2.66	3.32	54.23	2.62
m(dev C+dI)/m(C+dI)	Percent	3.66	3.44	3.85	4.06	57.96	3.14
m(dev T)	Million tons	.70	.90	.43	.42	.62	1/ .58
m(dev T)/m(C+dT)	Percent	6.51	1.30	4.24	3.77	105.08	.72
ratio (correl) between dev Q^i and dev C		.07 (-.12)	.12 (.25)	.17 (.12)	.17 (.52*)	.04 (.46)	.18 (.33)
and dev dI		.001 (.00)	.75 (.87**)	.58 (.65**)	.47 (.68**)	.21 (.51*)	.75 (.83**)
and dev T		1.06 (.77**)	.12 (.34)	.13 (.10)	.34 (.56*)	.74 (.91**)	1/ .12 (.39)
ratio (correl) between dev Q^W and dev C		-.008 (-.08)	.18 (.37)	-.006 (-.04)	.01 (.22)	.005 (.20)	.18 (.38)
and dev dI		.002 (.000)	.75 (.87**)	.58 (.65**)	.47 (.68**)	.02 (.19)	.75 (.83**)
and dev (C+dI)		.04 (.29)	.88 (.95**)	.05 (.36)	.12 (.67**)	.02 (.22)	1 (1)

ratio (correl)	between dev T^{EC} and dev rest of world exports	1.43 (.76**)
ratio (correl)	between dev T^{EC} and dev rest of world production	- .964 (- .24)

1/ World exports.

Table 6--Beef: Domestic and worldwide instability absorption, EC and selected countries, 1968/69-1980/81

	Dimension	EC	Rest of world	United States	USSR
m(dev C)/m(C)	Percent	1.61	4.01	5.40	3.45
m(dev dI)	Million tons	.07	.05	.02	.05
m(dev dI)/m(C+dI)	Percent	1.06	.16	.17	.83
m(dev C+dI)/m(C+dI)	Percent	2.03	4.02	5.40	3.36
m(dev T)	Million tons	.16	.20	.07	08
m(dev T)/m(C+dI)	Percent	2.43	.64	.61	1.33
ratio (correl) between dev Q^i and dev C		.17 (-.38)	.96 (.98**)	1.00 (.99**)	.71 (.89**)
and dev dI		.15 (.42)	-.004 (.11)	.001 (.03)	.04 (.18)
and dev T		.68 (.84**)	.04 (.26)	.009 (-.07)	.15 (.43)
ratio (correl) between dev Q^W and dev C		-.01 (-.22)	.95 (.99**)	-.43 (-.87**)	.06 (.41)
and dev dI		-.003 (.05)	-.007 (-.17)	.001 (.08)	-.01 (.31)
and dev (C+fI)		-.02 (-.21)	.96 (.98**)	.43 (.87**)	.005 (.03)

Continued--

Table 6--Beef: Domestic and worldwide instability absorption, EC and selected countries, 1968/69-1980/81--Continued

	Dimension	Australia	Argentina	New Zealand	World total
m(dev C)/m(C)	Percent	8.86	17.78	9.21	3.14
m(dev dI)	Million tons	.02	.03	.02	.09
m(dev dI)/m(C+dI)	Percent	.96	4.00	12.5	.23
m(dev C+dI)/m(C+dI)	Percent	8.66	20.21	18.21	3.15
m(dev T)	Million tons	.12	.13	.03	1/ .15
m(dev T)/m(C+dI)	Percent	5.76	17.33	18.75	.39
ratio (correl) between dev Q$_i$					
and dev C		.66 (.89**)	.43 (.82**)	.15 (.46)	.93 (.99**)
and dev dI		-.02 (-.36)	.09 (.63*)	.37 (.78**)	-.01 (-.14)
and dev T		.35 (.72**)	.47 (.82**)	.46 (.77**)	1/ .04 (.26)
ratio (correl) between dev Q^W					
and dev C		.08 (.56)	.08 (.92**)	.007 (.62*)	.93 (.99**)
and dev dI		.00 (.04)	.01 (.48*)	.01 (.69)	-.01 (-.14)
and dev (C+fI)		.08 (.58*)	.10 (.89)	.01 (.82**)	1 (1)

ratio (correl) between dev T^{EC} and dev rest of world exports: + .43 (+ .26)

ratio (correl) between dev T^{EC} and dev rest of world production: + 1.664 (+ .25)

1/ World exports.

RELATIONS WITH THE THIRD WORLD: VIEWS ON THE NORTH-SOUTH DIALOGUE AND FOOD SECURITY

The United States

Charles E. Hanrahan

U.S. economic policy toward the Third World derives from U.S. concerns with the global economy as it affects U.S. economic interests and with promoting our national security interests. The developing countries are economically important to the United States and to the other developed countries. In 1970, the developing countries accounted for around 30 percent or $13 billion of U.S. exports. Today, these countries account for 37 percent or some $80 billion. The United States exports more to the developing countries than to Europe and Japan combined. More importantly, the developing countries have the potential for further increases. U.S. investment in the developing countries increased from $19 billion in 1970 to over $50 billion in 1980.

There are many developing countries that are important to the United States by reason of their strategic location, resource endowment, or political leadership. Further, the United States has a humanitarian interest in assisting the poor countries to improve their nutrition, health, education, and housing.

U.S. Economic Objectives Toward the Third World

Statements outlining present U.S. goals and objectives toward the Third World are contained in the President's remarks to the World Affairs Council in Philadelphia (October 1981) and in his opening statement to participants in the International Meeting on Cooperation and Development held in Cancun, Mexico 1 week later. In both these statements the President laid down the U.S. view on how the developed countries can best assist the Third World to achieve economic development and, among other things, food security.

A Cooperative Strategy for Global Growth: Five Principles

1. Stimulating international trade by opening markets with individual countries and among countries;

2. Tailoring development strategies to the specific needs and potential of individual countries and regions;

3. Guiding U.S. assistance toward development of self-sustaining, productive activities, particularly in food and energy;

4. Improving the climate for private capital flows and technology transfer; and

5. Creating a political atmosphere in which practical solutions can move forward ... (without) policies that restrain and interfere with the international market place or foster inflation.

Trade and Access to Markets. U.S. trade policy toward the third world is strongly influenced by both economic and political considerations just as is U.S. trade policy toward the developed countries or the centrally planned economies. The United States has long maintained that its own economic and

political interests and those of Third World countries would best be served by integrating the developing countries into the world trading system.

In accord with this principle, in trade as in other aspects of international economic affairs, the United States has insisted upon the role of the existing international institutions and their "competence" to deal with international economic problems rather than the creation of new institutions to solve economic problems. As the international financial crisis has deepened, U.S. support for the International Financial Institutions (IFIs) seems to have strengthened, for example, Treasury Secretary Regan, quoted in a recent Washington Post article, spoke out in favor of strengthening the hand of the International Monetary Fund in meeting the credit needs of the developing countries.

One means of integrating developing countries into the world trading system has been the granting of preferred access to their exports. The United States continues to adhere to the principle of "differential and more favorable treatment" for the majority of developing countries. This policy of preferential access to the U.S. market by developing countries is implemented through the Generalized System of Preferences (GSP), under which $7.3 billion in developing country exports entered the United States duty free during 1980. This amount includes about $1.2 billion in agricultural products.

Access under GSP is limited by mandatory "competitive needs" tests that protect U.S. industry from excessive competition from third world imports. A competitive needs test is triggered when the dollar value of imports in a tariff category exceeds a certain dollar amount (currently $50.9 million) or when a single country supplies more than 50 percent of an item. Thus, as of 1980, preferences previously accorded to GSP beneficiaries on 29 products worth $510 million were lifted. In addition, there are procedures whereby U.S. interests may petition the Office of the Special Trade Representative to modify the list of eligible products.

The principle of favorable treatment and preferential access is also modified by the notion of "graduation". During the Tokyo Round of multilateral trade negotiations and in the recently concluded GATT ministerial, the United States insisted upon a greater degree of reciprocity in trade relations from the newly industrializing developing countries (NICs).

As the Congress moves in 1984 to consider the extension of GSP, "graduation" and competitive needs will likely become a more important criteria for the inclusion of countries and products receiving preferential treatment.

Private Investment. The U.S. commitment to private investment as a source of capital for development is unflagging even as the debt crisis in the third world deepens. Commercial lending and private investment should be fostered by developed and developing countries alike. Cofinancing of projects by the IFIs and private commercial banks, expanded activity by the International Finance Corporation (IFC), and the Overseas Private Investment Corporation (OPIC) are all viewed as means to increase the flow of capital to the Third World. Investment and tax policies in developed and developing countries alike should not impede private capital flows.

Development Assistance: Food and Energy.

Food. For some time, the major emphasis in our foreign assistance program has been on food and agriculture. Since 1975, more than half of the U.S. foreign economic and technical assistance has been devoted to food and nutrition activities under Section 103 of the Foreign Assistance Act (FAA). In the food and agricultural area, the main emphasis has been on technical assistance in agricultural research, education, and technology, not on resource transfers. Land-grant universities, under Title XII of the FAA, are playing an increasing role in the actual implementation of U.S. agricultural technical assistance programs. Recently, the United States has been insisting, as does the International Monetary Fund (IMF) in its lending, on food policy reform, especially price-policy reform in recipient countries ahead of or in conjunction with the provision of assistance.

Food aid is an important component of U.S. economic assistance.

Energy. As with food, the U.S. bilateral assistance program stresses technical assistance, not resource transfers. Multilateral lending, though not a special facility for energy development, is supported by the United States, provided projects are economically viable and involve the private sector.

Development Strategy--The CBI. A fourth principle, tailoring U.S. development strategy to the needs and potentials of individual countries or regions, is best illustrated by the President's Caribbean Basin Initiative (CBI). The CBI is a good illustration of U.S. policy and program for a number of reasons. First, it indicates how trade, aid, and private investment are supposed to work together to accomplish U.S. policy objectives in the Third World. Second, it illustrates the importance of political and national security considerations in U.S. economic policy toward Third World countries. Third, the difficulties confronted in Congress by the CBI demonstrate rather strikingly the influence that domestic economic interests can have on U.S. foreign economic policy.

The CBI, announced by the President in February, in an address to the Organization of American States, contains three major elements: a set of free-trade provisions (the so-called Free Trade Arrangement, or FTA), measures to encourage investment primarily through tax incentives, investment guarantees, and development assistance.

The Free Trade Arrangement (FTA)

Originally the free trade provisions of the CBI were to extend to Caribbean Basin countries, for a period of 12 years, across-the-board, duty-free treatment for all products with the exception of textiles and apparel. Although the CBI is a program distinct from the GSP, the same or similar modifications that have been made in GSP are included in the CBI. Safeguards, in the form of competitive-needs tests, are available to modify duty-free access when imports cause or threaten to cause serious injury to a U.S. domestic industry and its workers. Rules of origin under the FTA are the same as in the GSP except that the requirement for a minimum percentage of local value added is reduced from 35 to 25 percent. As proposed by the President, sugar would have entered under GSP provisions. Three Basin countries excluded from GSP--the Dominican Republic, Guatemala, and Panama--would be subject to duty-free, absolute quotas.

Possibilities for more favorable treatment of textiles, apparel, and meats were originally discussed but are not included in the CBI.

Measures to Encourage Investment

The CBI seeks congressional authorization to grant incentives to U.S. investors in the region. Specifically, the administration is seeking incentives in the form of a tax credit of up to 10 percent of the amount of fixed-asset investment in Caribbean countries. The tax credit would be granted for a 5-year period, and the credit would permit U.S. firms to reduce their net tax liability in the United States. The CBI would also enable the Export-Import Bank to extend guarantees for short-term credit between U.S. banks, exporters, and local commercial banks in the region.

The CBI also encompasses measures to strengthen the private sector's ability to exploit CBI created opportunities. One aspect of this would take the form of task forces to design private sector development strategies for each country, and which combine the resources of private, public, and voluntary organizations. These efforts to strengthen the private sector would include support for: regional trading companies, assistance in complying with U.S. health and sanitary regulations, improving transportation links, and training workers in appropriate skills.

Development Assistance

The administration requested $350 million in supplemental Economic Support Funds (ESF) in FY 1982 primarily for El Salvador, Costa Rica, and Jamaica. In addition, beginning in FY 1983 and continuing for a 3- to 4-year period, the United States would provide an annual $250 million increase in aid to help countries "revive agricultural and industrial production and create employment."

The Free Trade Arrangement of the CBI raised, of course, the greatest concerns on the part of U.S. interests. In Congress, proposed exemptions to the list of items to receive preferential treatment grew to include sugar and rum, in addition to the already excluded textiles and apparel. The tax and investment incentives intended to reduce the economic risks of producing and marketing in the Caribbean countries also have come under criticism. The only element of the CBI which has been enacted into law in FY 1982 is the $350 economic- and technical-assistance component of the package.

Caribbean nations responded, on the whole, positively to the CBI, as reflected for example, in the views of CARICOM leaders who found many elements of congruence between Caribbean views and the CBI. However, the Caribbean nations desire more in the way of capital investment for infrastructure than is contained in the program.

U.S. Policy Options Toward the Third World

Trade Policy. The basic tendencies in U.S. trade policy toward Third World countries are likely to persist during the eighties. The GSP, which expires in 1983, is likely to be continued for the exports of the relatively low-income Third World countries. If the pace of economic recovery is slow, and by growing protectionist sentiment, the continuation of GSP could, however, be jeopardized.

There is little likelihood that the United States will respond positively to Third World, primary producers' desires for international commodity agreements (ICAs). The developing countries argued their interests in ICAs at Cancun, but these arguments were largely ignored. Even it appears, UNCTAD VI, held in Gabon in 1983, has assigned a lower priority to commodity negotiations, focusing instead on service trade and investment issues.

The U.S. policy of open trade will not likely be applied to sugar and textiles. The U.S. market for sugar is protected by a combination of a tariff, a Section-22 fee, and quotas. These bring imported sugar prices to levels of price support prescribed for sugar in the 1981 farm legislation. Sugar interests in the southern and western United States are unlikely to give in on this issue. There is also little prospect for trade liberalization in textiles. During the negotiations for a new Multifiber Arrangement (MFA) in 1981, the United States did take a more liberal stance than did the EC with respect to imports of textiles from the developing countries. Ultimately, however, U.S. textile interests succeeded in getting restrictions on the rate of growth of imports and the new MFA, which expires in June of 1985, is even more restrictive than the previous one.

Development Assistance. It is unlikely that U.S. foreign aid will increase substantially in the foreseeable future. There is one bright spot in U.S. aid policy for those Third World countries heavily dependent on official development assistance (ODA) for their economic development which comes from applying the principal of graduation to aid giving. That is, the reallocation of foreign aid as resources are shifted from the NICS to the ODA dependent countries. This seems to be happening as development assistance in the Agency for International Development (AID) being allocated to many poor African countries, is increasing. (The World Bank is doing something similar within the International Development Agency (IDA) lending.)

A foreign-development assistance program, which emphasizes agricultural development through the provision of technical assistance by the land-grant universities and agricultural consulting firms, is also likely to persist.

Private Investment. The United States will probably continue to emphasize the role of private investment in contrast to aid. I have already mentioned efforts to enhance the role of the IFC and OPIC. The United States is also exploring means to encourage cofinancing of projects. One such means is eliminating the 10 percent-of-assets limit on commercial loans cofinanced by the World Bank and private commercial banks. Another example of the emphasis given to private investment is the U.S. committee on Jamaican investment, organized by David Rockefeller at the request of the President as part of the CBI.

U.S. Policy on Food Security

U.S. views on food security are unlikely to change significantly. The United States will continue to be the world's main supplier of food aid and will at least keep its minimum pledge of 4.47 million tons under the 1980 Food Aid Convention. The United States is unlikely to moderate its opposition to internationally controlled or coordinated grain reserves, but it strongly supports the creation of individual country-reserve systems and where appropriate regional, food security arrangements. The United States supported and continues to support the extension of the IMF's Compensatory Finance Facility to cover balance of payments problems resulting from increased food-

import costs due to domestic production shortfalls or sharp increases in the prices of imported food. One policy option open to the United States currently is to increase the amount of food available through P.L. 480, subject of course to international rules regarding the disposition of surpluses and the constraint imposed by the Federal budget.

Research on U.S. Third World Economic Relations

As noted, the U.S. GSP expires next year. We need to know much more about the effects of GSP on the exports of Third World countries and on U.S. trade, employment, and income. Not only do we need empirical analysis of GSP but also of the Free Trade Arrangement proposed for the Caribbean Basin Initiative.

The Generalized System of Preferences Eliminating Trade Distortions in the NICs

As mentioned above, the United States seeks to integrate the developing countries into the world trading system and seeks also to apply the principles of graduation and reciprocity to the NICs. It is important to identify and measure the effects of trade restricting policies in these countries on our exports. Trade barriers in the NICs should be examined carefully and models developed to estimate the effects of their removal. This is particularly important with respect to agricultural trade to those countries. Among the trade-distorting measures analyzed, should be exchange-rate regimes and the effects of liberalizing them.

Market Development

The United States is looking to markets in the Third World as a source of growth for agricultural and other exports. Thus, the role of developing countries as importers requires research attention. We need to enhance our understanding of the relationship between imports from the United States and development strategy, patterns of development, income, investment strategy, and exports. Related to this is research to investigate the effectiveness of U.S. export promotion activities compared to those of our major competitors.

Foreign Private Investment. U.S. policy toward Third World countries places great emphasis on private investment as a source of development capital. Yet both the United States and developing countries themselves impose performance requirements on U.S. firms investing abroad. The effects of these requirements on trade, income, and employment in the United States and in the developing countries needs to be assessed. Needed also are analyses of ways to negotiate reductions or elimination of performance requirements in the developing countries. (Information on negotiating strategies for reducing trade distortions in developing countries is also a serious need.) The conditions in the developing countries--levels of income, levels of education, and labor skills--that influence investment also need to be identified and analyzed.

RELATIONS WITH THE THIRD WORLD: VIEWS ON THE NORTH-SOUTH DIALOGUE AND FOOD SECURITY

Canada

T. K. Warley

Position and Posture

Canada ranks fifteenth in the world in per capita income, tenth in industrial output, and fourth in trade. As such, it is first and foremost a member of the group of industrialized democracies, a "leading nation," but ranking in the second tier, a "middle" power.

Canada's foreign and foreign economic policies are aimed at fostering peace, harmonious foreign relations, stability in the international economic order, and economic growth for Canada. With trade accounting for 30 percent of gross national product, 20 percent of employment, and almost 75 percent of the value of output of the goods-producing sector, Canada has the most trade-dependent economy of the Western "summit nations." Accordingly, trade policy is a prominent component of its foreign and foreign economic policies.

Historically, since its bilateral bargaining power with the industrial giants--the United States, the European Community, and Japan--has been perceived to be small, and because it seeks to minimize the pull of the gravitational field of the United States, Canada has favored multilateralism in its external economic relations and the creation of a rule-oriented international economic system.

With respect to the Third World, Canada's broad goals are to promote self-determination, nonalignment, and accelerated development, so as to immunize the developing countries from East-West conflicts rather than involve them.

Canada has played an important and distinctive meliorist, broker, or bridge-building role in the North-South dialogue. It is uniquely fitted for this task by its being both a member of the Group B countries and well regarded by the Group of 77. The reasons for its acceptability to the LDCs include: it has no colonialist past or geopolitical ambitions; it has links with a large number of LDCs through membership in the Commonwealth and *la Francophonie*; it shares concerns over dependence on the United States; and as a country with a weak manufacturing sector which exports resources and imports capital and technology, it shares many economic problems with developing countries. Also, Prime Minister Trudeau has sought a leadership role in the field of development cooperation. Hence, Canada has been deeply involved in the North-South dialogue. It has exercised creative diplomacy in keeping the problems of the South on the agenda of the Western summit meetings, and in seeking to break log-jams; and give momentum to deliberations in meetings of Commonwealth leaders, at the Western summits, in the Conference on International Economic Cooperation (CIEC), in the U.N. Assembly and Agencies, and at Cancun.

Canada's direct economic interests in the Third World are also substantial. Although the LDCs--which take around 9 percent of its exports and supply 15 percent of its imports--are not as important as trading partners as they are to the United States, the EEC, and Japan (Economic Council of Canada),

nonetheless, these proportions have been edging upwards, and the developing countries are perceived as offering good trade growth potential in the future (Dobson, Walker). More particularly, together they offer some alternative to the United States, which now takes 70 percent of Canada's exports but where there is clear evidence of a secular slowing of the rate of growth and a threat of gathering protectionism (Daly). Also, the LDCs offer promising investment opportunities for Canada, especially in resource industries, utilities, transportation, and telecommunications, the fields in which Canada has a comparative advantage.

So far the LDCs have been treated as an entity. In reality, "the South is not a homogenous group of countries. It contains countries with the highest per capita income in the world and those with the lowest; countries with the fastest growth and countries suffering negative growth; countries with the world's biggest financial surpluses and those with the greatest deficits; countries with abundant natural resources and those with none; and countries with sophisticated modern industrial economies and those with rudimentary, tribal, agricultural societies" (Trudeau). Canada's relations with Third World countries are correspondingly characterized by diversity and nuance, ranging from a relationship with the least developed (LLDCs) that stresses aid to relationships with the oil exporting and newly industrialized countries (NICs) that emphasize trade, finance, and investment.

Development Cooperation

As noted above, at the rhetorical and political levels, Canada has been generally supportive of the LDC's aspirations for the creation of "a new international economic order" (NIEO) and has sought to play a constructive role in the conduct of the North-South dialogue. At the level of practical policy action on the specific components of the NIEO, the record is "spotty" (North-South Institute, 1980a and 1980b).

Aid and trade policies and practices are sufficiently important to be treated separately in subsequent sections.

Canada has been very sensitive to the balance of payment and debt problems of the LDCs. This is to be expected of a country which is the seventh largest provider of profit-seeking private loan and investment capital to the LDCs; which has one-third of its overseas private investment stock located in them; and whose banking system is dangerously exposed to possible defaults on debts by such countries as Brazil, Mexico, and Argentina. Canada has supported reforms and adaptations in the International Monetary Fund in the areas of increasing country quotas, expansion in the number and scope of special facilities, easier repayment terms, and caution in prescribing too large a dose of deflationary medicine. It took the lead on the occasion of the CIEC in cancelling the aid-related debt of the poorest countries, and has participated actively in the restructuring of the debt obligations of several Third World nations.

Canada has also played a significant role in the provision of multilateral development finance. It is a member of all the Regional Development Banks. In the World Bank, it has supported program lending, change in the gearing ratio, and creation of an energy affiliate.

In respect to the "integrated program for commodities" (IPC), Canada's position has been passive, reactive, and ambiguous (North-South Institute,

1982). As a net exporter--and a large one--of the "core" commodities, and as a country with shared problems with the LDCs in its commodity trade (for example, periodically adverse movements in its terms of trade, earnings instability, tariff escalation against fabricated products, and high degrees of foreign-ownership and technological dependency), it might have been expected that Canada would have been especially supportive of this component of the NIEO. In practice, it has moved cautiously, favoring "market solutions" to multilateral market management, taking a case-by-case approach to stabilization-oriented consumer-producer international commodity agreements (ICAs), and agreeing to the creation of only a minimalist common fund. It has supported improved market access for resource-based products and programs aimed at market development and quality improvement. Canada is a member of the existing ICAs for coffee, sugar, rubber, and tin, and will likely join that proposed for jute. And it is, of course, a leading supporter of international market management for grains. On the other hand, it has not joined the agreement for cocoa, nor has it favored the creation of ICAs for copper, iron ore, vegetable oilseeds, and timber. It took the initiative in the formation of the uranium cartel, but has declined to join the producers' associations for copper and iron ore.

Canada played the leading role in the decade-long negotiations in the U.N. Conference on the Law of the Sea (Munro). Throughout, it worked closely with the LDCs, and on many issues made common cause with the Group of 77. In particular, it supported the concept of the seas being a "common heritage of mankind," the establishment of international institutions to govern their use, and the principle of sharing the revenues obtained from the recovery of polymetallic nodules they contain. Of course, Canada's larger interests were in the recognition of a 12-mile territorial sea, a 200-mile exclusive economic zone, jurisdiction over the fish and other resources of the continental shelf for Coastal States, and control of mineral production from the Abyssal Plain.

On other issues of the NIEO (for example, institutional reform, the transfer of technology, the regulation of the behavior and treatment of multinational corporations, patent reform, shipping, and the contrived relocation of industrial activity), Canada has made few distinctive contributions. Indeed, as was the case on issues of international commodity policy, Canada has rarely broken ranks with the other Group B countries (North-South Institute, 1979).

Development Assistance

While this is perhaps the least important interface between the LDCs and the developed countries, it is one of the more tangible. To Canadians, it is also a matter of some sensitivity because of the origin of the 0.7 percent-of-GNP target in the Pearson Commission.

Participation in the provision of overseas development assistance (ODA) is animated in Canada, as elsewhere, both by considerations of humanitarianism and global solidarity and by self-interest. There is tension between these. Genuine concerns with real development lead to an orientation in Canada's ODA toward a role as catalyst rather than principal; a stress on building indigenous development capacity rather than projects; a focus on agricultural, rural, and human development rather than an urban-industrial and infrastructural focus; and a cultural rather than an economic model of the development process (Canadian International Development Agency). By contrast,

considerations of self-interest dispose towards the use of aid to win friends, out-bid the Communists, buy a seat in international councils, subsidize Canadian industry, and create customers for Canadian products.

Canada's aid program has never been a model among the OECD's Development Assistance Committee, and recently it has been lacklustre.

In terms of aid "targetry," disbursements as a percentage of GNP slipped from 0.49 to 0.42 between 1978/79 and 1980/81, and with recent cuts, may be below 0.4 percent in 1982/83. The stated goal is to give 0.5 percent of GNP by 1985 and to endeavor to attain the 0.7 percent target by 1990. However, aid is increasingly seen by the Government and by the people as a major expenditure item which is often wasted or stolen, and which readily lends itself to economies.

In terms of "quality," Canada's aid program ranks "fair to middling" insofar as: the grants-to-loans ratio is high; loan terms are mostly so soft as to be near-grants; there is a ratio of 40:60 between multilateral and bilateral programs; 35 percent of bilateral aid is directed toward the LLDCs and 75 percent to the MSA countries; and the Canadian International Development Agency (CIDA) has adopted the "basic needs" theme and singled out food and agriculture, energy, and human resource development as priorities for Canada's development assistance programs. Long-standing weaknesses in the program include a high degree of "tying" (80 percent of bilateral aid must be spent on Canadian goods, with not less than two-thirds of the value-added being in Canada), and the fact that aid is administered in a highly centralized system and disbursed over an impossible-to-manage 80-plus countries. Many fear that quality will deteriorate further in the future as the emphasis shifts from doing good to doing well (that is, to building up "cashable" political and commercial credits), as the proportion of multilateral aid is lowered (perhaps to a ceiling of 35 percent), and as more assistance is concentrated on lower-middle income developing countries that offer better market opportunities for Canadian industries (including the Canadian agriculture and food sector). Additionally, the early commitments to agriculture and rural development and to enhancing world food security seem to be weakening. Such developments would be regrettable since "Canada's aid performance has for some years been viewed as the main redeeming feature in an otherwise undistinguished record of action in response to the Third World" (North-South Institute 1980a).

Food Aid

In 1980/81 Canada's food aid shipments were "valued" at just over $180 million. This was about 15 percent of each of its total multilateral and bilateral aid disbursements in that year. Food aid in calendar 1981 accounted for about 14 percent of the value of total agricultural exports to developing countries (except China and Cuba), and 2 percent of all agricultural exports. Contributions to multilateral programs account for some 60 percent of Canada's total food aid, while 40 percent is donated bilaterally. The major multilateral effort is support of the World Food Program in implementation of Canada's commitment, under the Food Aid Convention, to supply 600,000 tons of grains as food aid annually (CIDA). Grain is the major commodity Canada

provides as food aid, but significant quantities of dairy products and rapeseed oil are shipped regularly, and donations of other products (for example, egg powder, potatoes, and even beef) have been made sporadically.

In Canada, as elsewhere, the food aid program has been variously criticized for: being too niggardly (the FAC commitment was reduced from 750,000 tons to 600,000 in 1978); not being made in forward pledges and in quantitative terms; creating disincentives to agricultural production in recipient countries; being a vehicle for disposing of domestic surpluses; and for not being used sufficiently to develop commercial markets for Canada's exports. Additionally, it has been said that multilateral food aid (which is largely controlled by Agriculture Canada) is not well integrated with the bilateral food aid program (which is administered mainly by CIDA), and that food aid is poorly integrated with Canada's nonfood development assistance (Cohn).

However, this is but symptomatic of a larger problem. Having no Ministry for Development, Canada's aid programs generally lack focus, and--more generally yet--there is but poor coordination in Canada between development assistance efforts and the nonaid dimensions of the North-South relationship.

Trade

Trade is clearly the central factor in the North-South equation. As noted earlier, with LDCs taking 9 percent of exports and supplying 15 percent of imports, Canada's trade is not notably oriented towards the LDCs. Reasons for this include: the high proportion of resource-based products in Canadian output; its historical position "which has been that of a peripheral entity linked with metropolitan economies based beyond its borders--first France, then Britain, and now the United States" (Economic Council of Canada); and the large share of its manufacturing industry that consists of foreign-owned branch plants producing for the national market. However, the proportion of Canada's trade done with the LDCs has been slowly rising (in 1966-70, the figures for exports and imports were 7.5 and 8.8 percent, respectively); and with the developing countries expected to account for more than 25 percent of the increase in world production and about 30 percent of the increase in world trade in this decade (External Affairs Canada), the general trade relationship between Canada and the Third World is taking on increasing significance.

In agricultural trade, the importance of this relationship is an established fact. In 1981, the LDCs provided 18 percent of Canada's agricultural imports. In that year, the developing countries (excluding China and Cuba) absorbed 16 percent ($1,386 million) of all Canada's agricultural exports (China took a further 8 percent); 15 percent of its shipments of grains, grain products, and animal feeds; and 14 percent of all exports of oilseeds and oilseed products (Agriculture Canada). In some recent years, the proportions have been higher. Looking to the future, Canada sees the geographic shift in the direction and momentum of its agricultural exports being still more towards the LDCs (and the centrally planned economies), since these markets (especially OPEC and the NICs) offer a dynamic that the United States, Western Europe, and perhaps Japan, do not possess, given the saturation of their food demand and the inelasticity of their agricultural supply--even with some easing (which is unlikely) of their agricultural support policies (Agricultural Institute of Canada).

As part of its marketing effort in the LDCs (and elsewhere), Canada is paying some attention to its credit arrangements and marketing institutions. The perception is that Canada is unable to meet competition in the rates, coverage, or terms of export credits, and that a growing number of LDCs prefer to deal with state trading agencies. Accordingly, some consideration is being given to matching the subsidy element in the credit arrangements available to other agricultural product exporters (Export Market Development Task Force), and Canagrex will be a parastatal trading agency able to deal on a government-to- government basis. Such arrangements will not apply to Canada's trade in grains. The Canadian Wheat Board is such an agency, and it already has access to special credit facilities.

Market growth in the LDCs for Canada's total and agricultural exports is dependent on their having adequate earnings of foreign exchange. Unless the South exports to the North, it cannot pay for the North's exports to the South. The conditions of access to the Canadian market for LDCs present a mixed picture. Canada already provides duty-free entry for many tariff-line items and low duties for many more. By 1988, when the Tokyo Round tariff cuts are fully implemented, some 80 percent of Canada's trade will be duty free. However, Canada still retains tariff "peaks" on sensitive products, and tariff escalation provides high levels of effective protection for value-adding activities in Canada, especially for the processing of agricultural products. Furthermore, some of Canada's protection is directed at raw and processed agricultural products (for example tobacco, fruits and vegetables, beef, and sugar) that are of export interest to a range of developing countries. Also a preferential tariff structure for sugar favors Australia and South Africa (and Commonwealth Caribbean countries) over LDC suppliers.

A generalized system of preferences for the LDCs was introduced in 1974. It is to be extended to 1992. It provides virtually all the LDCs with access to the Canadian market at the British Preferential tariff rate, or two-thirds of the MFN rate. However, its benefits to the LDCs are not large. Among the reasons for this are: the inclusion of many of the highest income developing countries and three Eastern European countries (Bulgaria, Romania, and Yugoslavia); a rule that not more than 40 percent of the value of the product can be accounted for by imported components (including imports from other LDCs but excluding imports from Canada); and a wide range of products are excluded, including most agricultural and food products and such sensitive manufactures as textiles, apparel and leather, and rubber footwear (albeit that the latter are subject to quantitative import restraints) (North-South Institute 1980b). Consideration is presently being given to a widening of the product coverage and the adoption of cumulative rules of origin. However, in the present environment, there is little prospect that Canada's GSP arrangements will become significantly less niggardly.

Indeed, regrettably, the conditions of access to the Canadian market for Third World countries, particularly the NICs, have worsened markedly in the past 3 years. Faced with the triple onslaught of recession, high unemployment, and intense foreign competition, Canada has moved to restrict access for textiles, apparel, leather goods, and footwear by a battery of global quotas and bilateral 'voluntary' export-restraint agreements. These arrangements have been forced on the weak by the strong, they have avoided the obligations of the GATT, they are not subject to multilateral surveillance, they have no termination dates, and they are discretionary and discriminatory. In mitigation, it may be said that Canada's position is much influenced by its having too much of its industrial structure in mature, standard-technology

industries, by the sensitivities that attend the fact that these industries are located in a handful of key electoral ridings in Quebec and the Ottawa Valley, and by the need to prevent the Canadian market from being swamped by the backwash of products that have been deflected towards Canada by the protective measures of other countries (North-South Institute 1980c). It has also been claimed that even under restraints, import penetration ratios for textiles (25 percent) and apparel (7 percent) are high by international standards and no worse than mandated under the Multifibre Agreement. Finally, it may be noted that while supplies from the NICs are only part of the competition provided by imports from all sources, they are the least acceptable because of wage-rate differentials, lower environmental standards, and poor working conditions.

World Food Security

On this theme of the North-South dialogue, Canada's record is credible. Agricultural and rural development have been priority in the bilateral assistance programs conducted by CIDA and the (uniquely constructive) International Development Research Centre. Canada has encouraged efforts in this area by multilateral institutions, for example, the World Bank, Regional Development Banks, the International Fund for Agricultural Development, and the Food and Agricultural Organization (FAO). It has been a large bilateral and multilateral supplier of food aid.

Canada has also been a consistent supporter of proposals to organize world grain markets through a consultative arrangement for coarse grains and by a Wheat Trade Convention with economic provisions in a renewed International Wheat Agreement (IWA). To be sure, Canada's desire for an IWA is animated primarily by domestic and "First World" considerations, for example, the search for mechanisms that would assure an adequate minimum wheat price and stability for Prairie agriculture; provide equitable international sharing of the costs of holding stocks and adjusting consumption and production to changing market conditions; and attenuate the dangers of destructive subsidized competition among the exporters. Nonetheless, potentially, the pricing, stocking, and adjustment provisions of the agreement on which negotiations were held in the 1977-79 period had the capacity significantly to enhance food security for the LDCs. In the event, like other exporters, Canada could not accept the LDCs' stance on the level and width of the trigger prices, the aggregate size of national stocks, and the terms surrounding the LDCs' stocking obligations. In the absence of an agreement, elements in Canada have pressed for the formation of a "coalition of exporters" to collaborate informally in grain-market management. It is not self-evident that such a development would be in the best interests of LDC food importers.

Canada has not favored the proposal made by the Secretariat of the World Food Council for the creation of a system of LDC-owned but internationally financed security reserve stocks, arguing that such stocks would be cost ineffective, inadequate to the task of stabilizing grain markets, and incapable of being operated within a negotiable framework (Hill).

Conclusion

Like other developed countries, Canada has been hard pressed to maintain a balance between promoting LDC interests and coping with LDC pressures, between the wish to assist generously and the reluctance to adjust appropriately.

There has been an all-too-familiar mix of confusions and inconsistencies in the Canadian response to the various subjects that constitute the agenda of the North-South dialogue.

Indeed, there has been a yawning gap between, on the one hand, Canada's early recognition of the need for change in the international economic order, and her policy and practice on the other. In many respects, Canada's performance has fallen well short of the hopes of her development community, of the promise of her rhetoric, and of her capacity.

Worse, there are signs that Canada is now withdrawing from North-South problem solving and is "jockeying for a low-profile and inoffensive location in the Western convoy" (North-South Institute, 1980a).

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RELATIONS WITH THE THIRD WORLD: VIEWS ON THE NORTH-SOUTH DIALOGUE AND FOOD SECURITY

The European Community

Paul Dymock

Introduction

The dialogue between the governments in the developed and developing countries, whatever the level or forum, is basically about changing government policies to improve economic growth in developing countries. The willingness of and need for governments to change policies varies. Some governments are not adverse to a few housekeeping improvements in the international effects of their own policies, and in the institutional aspects of the world's economic system. But there are governments who seek major changes, particularly by others.

In broad foreign policy terms, the EC position on the North-South Dialogue could be characterized as somewhere between the mild enthusiasm of Canada and the cautionary approach of the United States. 1/

The dialogue takes place in a diplomatic context, and this brings several biases. One is the emphasis on international rather than national impediments to growth. Another is that the beliefs of government officials in an exaggerated role for governments and international organizations are apt to prevail. Above all, the necessary diplomatic norm of "keeping channels open" ensures that in the dialogue it is difficult to distinguish ritual from reality, views from actions.

The agenda in the dialogue is not fixed and is clearly being influenced by the current poor global economic conditions. To a large degree, the ability of the EC to contribute to internationally coordinated improvements in the world's trading, financial and food security systems have been both improved and hampered by the CAP.

The CAP has an impact on all developing countries, via its trade practices which affect key international agricultural markets. As a result, there is widespread interest in the CAP's external impacts, but the complexities and the number of countries involved has led to either general or topic-by-topic (Lome Convention, sugar, and so on) reviews. There is comparatively little quantitative research on the net impact of the CAP, including export subsidies

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1/ Commission of the European Community. "Communities Policy for the North-South Dialogue," COM (81) 68, Brussels, Belgium, May 7, 1981; and "North South Relations" COM (81) 323, Brussels, Belgium, June 18, 1981.

and other EC policies, particularly aid, on a large number of individual developing countries 2/.

Trade Issues

Trade is featured in the Dialogue and attention is focused on access to markets and supplies and on the level and stability of commodity prices. The EC procedural view is that progress should be made on both trade topics on a global basis in the General Agreement on Tariff and Trade (GATT) and in the commodity fora. The general Community view on trade issues is that priority lies with strengthening the trading system and that special concessions to developing countries have to be supportive of this main mutual interest.

In its foreign economic policy towards developing countries the EC has generally given priority to trade issues, though aid is by no means neglected. Since the EC is still mainly a customs union, EC policy options are apt to be confined to the trade field. Member states have preferred to distribute bilaterally nearly 90 percent of their development assistance funds. The EC's liberal trading stance is marred like that in the United States by sectoral exceptions notably agriculture and textiles. These two sectors loom large in EC trade with developing countries--together they accounted for 24 percent of total EC imports (56 percent of EC imports, excluding petroleum) from developing countries in 1980. The EC emphasizes that 90 percent of its industrial imports and 60 percent of agricultural imports from developing countries enter duty free. Recently, adjustment problems in some industries, current worldwide recession, and EC perceptions of developing countries' needs have led the EC in its negotiating position in the North-South dialogue to put less emphasis on trade. More emphasis has

2/ Josling, T. "The European Community Agricultural Policies and the Interest of Developing Countries," Overseas Development Review No. I, 1979. London, United Kingdom.

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European Parliament, working documents, 1982-83: "Report of the Committee on Development and Cooperation on Measures Following the European Parliament Debate on World Hunger," and "Commission of the European Communities. Communication from the Commission to the Council Concerning a Plan of Action to Combat World Hunger," COM (81) 560, June 7, 1982.

been put on financial issues, energy, commodities, and food. In practice, the latter two items have a large trade-policy content.

The EC is only partially equipped to handle the main trade issues. The Common External Tariff does provide a basis for coping with market-access issues, but in terms of access to supplies--important to the EC in view of its mineral and petroleum import dependency 3/--there is no equivalent policy basis. Similarly, except on some CAP products, the EC does not have readily available the legal and policy arrangements to provide much to developing countries on the issue of the level and stability of prices.

In negotiations on international commodity agreements on nonCAP products, there is a good deal of consultation and cooperation between member states; most formalized perhaps for the bilateral arrangements on textiles and steel.4/ Cooperation for multilateral agreements partially reflects the combined importance of the EC-10. For instance, coffee is the leading agricultural export of developing countries and, as the EC imports a third of the world coffee supplies, it has a significant voting weight in any agreement. In addition, the EC can exert a small pricing influence via its own and member states' development assistance policies. By giving aid to coffee production in ACP states, it can insure a preferential margin for these countries over supplies from South America. 5/ The main influence of EC views and actions in practice on market access and pricing is, nevertheless, on products covered by the CAP.

Agricultural Trade

The founders of the CAP can barely be blamed for not forseeing the extent the CAP would impact on EC relations with developing countries. The trade policy stance at that time included no quantitative import restrictions, privileged market access for former colonies, and a predisposition to manage international commodity markets with formal commodity arrangement was considered to be in the interest of the developing countries.

But the powerful motor of a politically driven agricultural policy of high and stable farm support prices has now pushed EC agriculture beyond the security of the self-sufficiency ideals. Now EC agriculture has a growing dependency on the uncertain outcomes of the annual bargaining between EC governments over EC budgetary issues and on imperfect international agricultural markets. The disposal of the surpluses, particularly the half in budgetary terms (some $7.9 billion in 1980) that is disposed of with explicit export subsidies, has hampered the growth of political confidence within the Community in EC ideals, and brought new external strains for the EC in the numerous relationships that make up the interdependencies of international trade.

The CAP now distorts agricultural trade of developing countries in several ways for CAP and CAP-related products. Generally, the volume imported into the EC is lowered by relatively high internal prices and import restrictions.

3/ Stakhovitch, A., "A European View of Commodity Problems: Stabilization of Prices and Stabilization of Receipts," in Stabilizing World Commodity Markets, F. G. Adams, and S.A. Klein (eds.), Lexington, 1978.

4/ D. Hurd, "Political Cooperation," International Affairs, Summer 1981.

5/ The European Development Fund has spent or is expected to spend at least 100 million ECU on coffee development largely to expand coffee exports--see "Coffee, Cocoa, Bananas," European Information--Development, DE 34, Jan. 1982.

Conversely, for some products, the volume of imports is increased or maintained by special quotas or lowered tariff rates for selected developing countries and by the additional demand generated for nongrain feeds because of high bilateral prices for cereals. Non-EC demand may have increased and taste preferences changed because of exports of subsidized prices.

Generally, export earnings and production of developing countries are lowered by import restrictions. However, some developing countries increase or maintain their export earnings because of special market-access conditions. Earnings from and production for non-EC or third country markets are likely to have been lowered as a result of export subsidies.

Quantitative insight into the initial effects of those distortions and the extent of the transfers to and from the developing countries is patchy and somewhat overtaken by recent events; notably the increased use of export subsidies and cereal substitutes. Current trade levels provide a starting point.

The EC member countries, council, and commission are apt to counter charges of protectionism by emphasizing both the size of EC agricultural imports and the modesty of the exports. Agricultural imports from developing countries in 1980 on a per capita basis were $114, compared with $62 in the United States, and $48 in Canada. The agricultural trade surplus that developing countries earned in EC-9 markets--$15.7 billion in 1980--is probably more important in the economic growth of more countries than the other major developing country trade surplus on petroleum. In contrast, the developing countries' agricultural trade deficit with North America was $7 billion ($5.8 billion with the United States and $1.2 with Canada) in 1980. Of the EC's agricultural imports in 1979 from developing countries, 59 percent entered duty free. Duties (related to both the CAP and food industry protectionism) were imposed on 33 percent and levied on 7 percent. Of the EC exports to developing countries, 90 percent directly benefited from export subsidies.

Restrictions on Market Access

Border protection has played an important role in the EC's achievement of both a high degree of food self-sufficiency and farm-price stability. Also, to a less obvious extent EC farmers' incomes have been increased. The income-redistributive effects of those distortions have affected relations between EC member states; between the EC and other developed, lower cost producers (Australia, Canada, Yugoslavia, New Zealand, and the United States); and between the EC and developing countries. The restrictions as far as developing countries are concerned, cover CAP and CAP-related products and provide the food industry with considerable protection.

Johnson, 1964; Cline, and others, 1978, and Valdes and Zietz, 1980, 6/ have assessed quantitatively the impact on developing countries of agricultural trade protectionism by developed countries. Valdes and Zietz estimate that a

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6/ Johnson, D.G. "Agriculture and Foreign Economic Policy, J.F.E. Dec. 1964. Cline, W.R. and others "Trade Negotiations in the Tokyo Round--A Quantitative Assessment" Brookings, 1978. Valdes, A. and Zietz J. "Agricultural Protection in OECD Countries: Its Cost to Less Developed Countries", IFPRI Research Report No. 21, Dec. 1980.

5-percent reduction across the board in tariffs and other trade barriers for 99 commodities imported by 17 OECD countries results in 36 percent of the benefits in increased trade, approximately $3 billion, going to the developing countries. Valdes and Zietz indicate that South American beef and sugar exports were particularly affected by EC import controls. In the model developed, the EC was initially a net exporter of $120 million in sugar and its derivatives. After the 50 percent cut in tariffs, the EC reduced its sugar exports by $690 million and increased its imports by $644, with a net effect for developing countries of increasing exports of sugar and derivative products by $1.3 billion per year.

Other recent research on the impact of EC-trade measures on developing country trade takes more account of export subsidies. Richards 7/ suggests that removal of the EC sugar-support measures could increase other countries sugar-export earnings by 15-24 percent a year, some $365-570 million a year for the developing countries. Some unpublished work by Paarlberg and Sharples 8/ suggests the world wheat price could be 4 percent higher in the absence of EC export subsidies. With wheat imports of the developing countries at 10 million tons in 1981/82 and at an average gulf price of $170 a ton, this 4 percent rebate for wheat imports, partially at wheat-exporters' expense, could have been worth $687 million to developing countries in reduced wheat-import payments. Both of these studies concluded that the EC would remain a net exporter of respectively sugar and wheat. Such results seem to indicate that the current costs to the developing countries of lost export sales due to EC market-access restrictions may be less than the earlier studies implied.

A plausible interpretation of the available quantitative work could be that, whereas in the past there was clear evidence that the CAP had a significant net cost to the developing countries, now the current situation is not so clear. The size of the potential market for developing countries in the EC may have shrunk because of improved competitiveness of European producers. And removal of the export subsidies, in the short term, could, in the aggregate, make the developing countries worse off.

Besides restrictions on market access and export subsidies, another feature of the CAP, as currently implemented, is that it damages developing countries as a result of a policy of understocking, which destabilizes international markets. There are financial incentives in the EC to understock, if export subsidies are allowed and used, since it can be cheaper to sell with such subsidies rather than to store. The EC has not used storage policy to absorb the shocks of domestic production fluctuations. EC production instability is highly correlated with EC export instability. Since the EC has significant sugar-production instability, as shown by Schmitz and Koester 9/ and its share of world production and trade has increased, it has increased world sugar-

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7/ Richards, I.M. "EEC Sugar Support Policies and World Market Prices: A Comparative Static Analysis," Australian Bureau of Agricultural Economics, January, 1982.

8/ Personal communication of Philip Paarlberg and Jerry Sharples, Economic Research Service, USDA, December 1982.

9/ Schmitz, P.M. and Koester, U. "The EC Sugar Market Policy and the Stability of World Market Prices for Sugar" Paper presented at the Trade Research Consortium Meeting. 17-18 Dec. 1981. Berkeley, California.

instability. The recent changes in the EC's sugar-stocking policy may lessen in the future some of this transference of domestic production instability onto the international sugar market, in which developing countries in 1980 accounted for 64 percent of exports and 41 percent imports. The wheat case is discussed subsequently under food security.

Since its creation, the Community has endeavoured to reconcile the conflicting interests of its own agricultural producers and food-processing industries with similar interests in developing countries. There have been numerous efforts to reduce the impact of the import controls associated with the CAP on developing countries.

Encouragement of Market Access

The CAP principle of Community preference is apt to foster an ethos whereby anything that could be produced domestically and is not, is somehow a concession to, or a positive gesture in favor of non-Community countries. Agricultural imports into the EC from developing countries have been encouraged, or at least allowed into the EC market by, in effect, five different types of preferential trade arrangements. Most of these are arranged in a hierarchy, with some former colonies having more favorable access than other developing countries, who have more favorable access than developed countries. These preferences have a tangible value to the recipients, and they provide solid evidence of EC concern that economic growth in developing countries should not be hampered by EC agricultural protectionism. The arrangements probably hamper the unity of the Group of 77 in mounting a diplomatic offensive against the CAP. The arrangements probably cover less than a quarter of total agricultural imports, and less than half of the agricultural imports from developing countries. The schemes cover the Overseas Departments of France, Mediterranean countries, and the ACP countries. In addition, they include the Community's generalized system of preferences and agreements governing trade in nongrain feeds.

Overseas Departments. Since the establishment of the CAP, exports including agricultural exports, from the Overseas Departments of France have largely free access to the EC market. These departments include Guadeloupe, Martinique, Guiana, Reunion, and Ste. Pierre and Miquelon. The population of the Overseas Departments is very small (1.24 million in 1980), and their agricultural exports to the EC at $313 million in 1980 were 1 percent of EC agricultural imports from developing countries. They are of some significance in the management of the sugar regime of the CAP as their sugarcane exports to the EC (336,500 tons in 1980) were equal to about 5 percent of EC sugar exports. There are other arrangements for the Departments that affect developing countries' agricultural exports to the EC, such as the assurance of two thirds of the French banana market to Guadeloupe and Martinique.

Mediterranean Countries. The EC's foreign policy perspective on relations with developing countries in the Mediterranean basin continues to evolve. Initially, historical trade and aid linkages of international member countries were repackaged into an EC context. Then a broader Mediterranean policy evolved, which sought the harmonization of EC policies and tariff concessions to equalize the competitive trade position (not trade concessions) among the Mediterranean countries. Taylor 10/ has suggested the principal motivations

10/ R. Taylor, "Implications for the Southern Mediterranean Countries of the Second Enlargement of the European Community," Europe Information Development, June 1980.

for the EC's Mediterranean policy at the outset were essentially political and strategic. The Mediterranean was seen as an EC zone of strategic importance on the exposed southern flank of the Atlantic Alliance where the Soviet Union had been increasing its naval presence. More recently, the general issues of relations with Arab countries, the Middle East conflicts, and the security of petroleum and gas supplies have colored EC views on relations with mediterranean countries. Some of the factors behind the EC's Mediterranean policy have a striking resemblance to those behind the U.S.-Caribbean policy. 11/

Bilateral agreements with Mediterranean countries cover trade arrangements and various forms of cooperation and financial aid. The countries are the Maghreb--Algeria, Morocco, and Tunisia; the Mashreq--Egypt, Jordan, Syria, and Lebanon; and Cyprus, Malta, Israel, Portugal, Turkey, and Yugoslavia.

In general the EC is the major trading partner and runs a trade surplus with each of the countries. EC financial aid to southern Mediterranean countries, averaged on an annual basis 1977-81 about $145 million; in recipient per head terms, most of this aid was in the $1 to $3 range (except for Cyprus at $10 and Malta at $15).

The individual agreements have common elements:

- o Duty-free access to the EC for industrial goods;
- o Preferential access for some major agricultural products, but within well-defined limits;
- o Access to EC development grants and loans;
- o Renunciation by the EC of preferential access to the Mediterranean countries; and
- o Consultation mechanisms.

In view of the similarity in climate between the Mediterranean countries and EC members bordering the Mediterranean, a higher proportion of the Mediterranean farmers' agricultural output may be in competition with EC agricultural production than compared with the output from other developing countries. In general the import provisions of the CAP for Mediterranean agricultural products are of three types: substantial barriers (relatively high tariffs--sometimes a reference price system throughout the year); lower barriers for noncompetitive, off-season products (new potatoes and tomatoes); or duty-free access where there is not much EC production (citrus). The principal competitive products imported from the Mediterranean countries include: olive oil, wine, some citrus, and potatoes. The export value of EC

11/ "Caribbean Basin Initiative," U.S. State Department Bulletin, April 1982.

trade concessions to Mediterranean countries may be around $200 million. Hunt 12/ has suggested that in relation to the main concessions on fruit and vegetables: "... the tariff concessions in the agreement have been of marginal benefit to the third countries which possess them. In periods of oversupply, the concessions can be suspended. In periods of undersupply, there is ample room for countries with and without concessions to enter the market so that benefits to the third country supplier, which has the concessions, are marginal. The proliferation of such concessions among a wider range of commodities and to a broader group of countries has further weakened the benefit to any single country. The tariff concessions, however, do enable the countries which possess them to retain part of the levy that generally goes to EEC producers and exporters through the farm income and export subsidy programs of the CAP."

The enlargement of the EC-10 to include Spain and Portugal will substantially erode the trade concessions in the EC's agreements with the Mediterranean countries. The enlarged Community will then have a surplus in most Mediterranean products. Morocco and Tunisia are likely to be the hardest hit, and olive oil the first big market to disappear. According to EC commission estimates, the EC-12 would likely have a structural olive oil surplus of 200,000 tons. This quantity is equivalent to four times what Tunisia, the EC's biggest external suppplier, exported annually to the EC-9, in recent years.

The ACP Countries. The Lome Convention, which provides for trade and aid to developing countries, is the centerpiece of the EC developing country relation- ship. Not only is the Lome Convention a format for institutional links with half of the Group of 77, it is also seen as providing a superior set of relations with the Third World compared to those of the United States or other developed countries.

The provisions of the 1980-85 Convention between the EC-10 and 61 mostly poor developing countries in Africa, the Caribbean, and the Pacific (the ACP countries) cover: trade cooperation (free access, without reciprocity, to EC markets); insurance schemes (STABEX, for export-earning stabilization on 43 mainly tropical agricultural products); SYSMIN (for maintenance of productive capacity for minerals); a sugar protocol to provide price guarantees and market access for 14 ACP sugar exporters; industrial cooperation (training, technology transfer, and finance); agricultural cooperation (finance, training, and a Technical Centre for Agricultural and Rural Cooperation); and financial and technical cooperation. Under the European Development Fund (EDF), a total 5.7 billion ECU over the 5-year period is provided.

One summary, somewhat extreme, view of Lome, is that of Green, 13/ who has characterized Lome as "a not very major redrawing of a particular set of colonial merchantilist relationships to take account of not very extreme peripheral state pressures for a less uneven deal within the old order, and has had remarkably little overall impact either on the EEC or the ACP components with the probable exception of their respective beet and cane sugar sectors. It is a reflection of relationships, not a major causal factor".

12/ H. D. Hunt. "Fruit and Vegetable Exports from the Mediterranean Area to the EEC," World Bank Staff Working Paper No 321, March 1979.

13/ R. H. Green "The Child of Lome: Messiah, Monster or Mouse?" in The Political Economy of EEC Relations with African, Caribbean and Pacific States, Frank Long (ed). London: Pergamon Press, 1980.

Certainly the trade and aid significance of Lome for the EC economy is small. In 1980, 3.6 percent of EC imports and 3.1 percent of EC exports were with ACP countries, and this pattern has not changed very much. ACP exports are nearly all primary products (the biggest item is oil from Nigeria), and their imports from the EC are nearly all manufactures. The agricultural imports from ACP countries, 30 percent of the total, were worth $7.8 billion in 1980. These accounted for 17 percent of EC agricultural imports from all developing countries, and 12 percent of total EC agricultural imports.

The CAP has affected at least three of the Lome provisions: trade cooperation, export earnings, stabilization, and financial aid. 14/ On trade, the CAP is a factor affecting competitive products; notably it is a factor in the establishment and management of EC import quotas for duty- free access for sugar or beef from ACP countries. In relation to the insurance schemes, STABEX does not cover CAP products such as rice, sugar, and beef, so ACP exports, above the largely static sugar and beef quotas to the EC, are not covered. The financing of the CAP from Community funds could be a factor in determining the product coverage of STABEX. The desire to limit expenditure on aid, such as for STABEX, in order to finance the CAP, may be one of the reasons why minerals are not covered by STABEX. For instance, the cost of including copper in 1976 would have been more than twice the annual allocation to STABEX of the funds available (112 million ECU), so they were cut back by half. 15/ In 1981, claims were four times the funds available (112 million ECU), so EC member countries doubled their contribution and cut back the payments by half.

The main economic component of Lome concerns EC developing country trade. Under Lome, 98 percent of ACP exports enter the EC duty free. Imports subject to duty are negligible and only 2 percent are subject to levies (rice, sugar, and beef).

Hewitt and Stevens 16/ point out that the Lome concessions ignore the dynamic context of changes the ACP countries desire in the structure of their trade. Most of the exports from the ACP countries are raw materials which would get duty-free access anyway, the preferential access for some products--cocoa and bananas--is partially at the expense of other developing countries, and the ACP countries are not in a position to benefit greatly from duty-free access for industrial products.

The main exception to the freedom from customs duties and quantitative-restrictions is for imports of agricultural products which are directly or indirectly covered by the CAP. Basically, for duty-only items ACP countries are granted exemption, and, for levy products there are a series of special arrangements. For beef and veal, rice, fruit and vegetables, and raw tobacco there is total or partial exemption under certain conditions notably quantitative limits.

One of the two main economic concessions concerns an annual quota of 30,000 tons of beef and veal for four African counties--Botswana, Kenya, Madagascar,

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14/ Harris, S., and others. The Lome Convention and the Common Agricultural Policy. Commonwealth Secretariat, December 1978.

15/ B. Persaud, "Export Earnings in the ACP/EEC Convention" in F. Long, (ed.).

16/ Hewitt, A., and C. Stevens, "The Second Lome Convention in EEC and the Third World: A Survey, C. Stevens (ed.), Holmes Meier, 1981.

and Swaziland. These imports, nearly all of which are to the United Kingdom, are free of customs duties, and the levies applicable are reduced by 90 percent, provided an amount equivalent to that reduction is collected by the beneficiary countries. The export (f.o.b.) value of these shipments at $2,000 a ton is approximately $60 million. The EC is a beef exporter, so this concession has an EC budgetary significance in terms of additional expenditure on beef-export subsidies.

The sugar arrangements provide for 14 ACP states (and 4 territories) to supply the EC with 1.28 million tons of white sugar at a guaranteed price. At 18 cents a pound, this commitment is worth $508 million. The EC commission uses the example of Mauritius (quota, 487,200 tons). The difference between the guaranteed price for the 1977/78 crop year and the average world price (July-December 1977) amounted to, taking its quotas into consideration, approximately 68 million ECU, and for the 1978/79 crop year, approximately 84 million ECU; that is over 10 percent of its GNP, 27 percent of its total export earnings, or coverage of 1 year's imports of Community equipment and manufactures.

Generalized System of Preferences (GSP). The CAP is generally considered to have been a major influence on the agricultural content of the EC's GSP scheme. The Community's scheme was the first and is the largest of the 11 tariff preference schemes adopted by OECD countries. Begun in the period 1971-76, the schemes have the objective of increasing developing country export earnings, promoting their industrialization, and accelerating their economic growth. They offer exporters in developing countries the advantage of lower tariffs over developed country exports competing on most favored nation (MFN) terms. The schemes were adopted by the OECD countries on a unilateral, nonbinding basis and are now an important feature of international-trade policy. In 1980, imports eligible for inclusion in all GSP schemes from over 100 beneficiary countries were about $55 billion, equivalent to 31 percent of dutiable imports from all beneficiary developing counties.

In practice, however, and perhaps for reasons to do with the preliminary notification requirements, the absence of incentives to request GSP treatment and rules of origin, the amount of imports actually accorded GSP treatment in 1980 was $25 billion. In the same year, actual EC, United States, and Canadian imports under the GSP reached respectively $9.3, $7.3, and $0.75 billion. Nearly three quarters of this trade is with 10 countries (in order of importance): Taiwan ($1.7 billion, benefits only from the United States), South Korea ($1.5 billion), Hong Kong ($1.5 billion), Brazil ($1.4 billion), followed by Yugoslavia, India, Mexico, Malaysia, Singapore, and the Philippines.

The preference schemes are a compromise between the developing countries' desires for unrestricted market access and fears in the industrialized countries about market disruption. The concern that the schemes should not be prejudicial to the OECD economies has led to a relatively poor coverage in the agricultural sphere. The EC scheme has evolved to cover, by 1981, some 317 processed agricultural products with an offer value of $2,088 million (1,820 million ECU). Actually, $1,870 million (1,625 million ECU) were exported under GSP. GSP covers roughly about 8 percent of total developing country agricultural exports to the EC. About 80 percent of these GSP imports have either tariff reductions ranging from 20-50 percent or are granted duty-free access (covering 73 products), and for which there are no quantitative limitations. The average preferential margin for agricultural products in 1981 was 7.4 percent.

There are five sensitive products, whose import offer value was $380 million ($340 million ECU), which are subject to individual or global tariff quotas. These are soluble coffee, cocoa, butter, two types of pineapple, and Virginia tobacco. In these cases, there is an automatic introduction of custom duties once the national limit in a Community country is reached. Except perhaps in the case of tobacco, these quantitative restrictions, for which the ceilings and EC country allocations have largely remained constant in recent years, reflect protectionism of the food-processing industry rather than of agricultural production.

In practice, there has been an evolution in the EC's GSP towards greater consideration of the least developed countries. Since 1977, this group has had complete exemption from duties on industrial products (including textiles) without any limitation. Since 1979, they have had duty-free access on all the agricultural products on the GSP list, and since 1981, some new products were added just for the least developed countries. The EC commission proposals for the GSP for 1983-85, reflecting pressures from the European Parliament, include the suggestion that the least developed countries receive the same benefits as ACP suppliers (duty-free access, except on levy items) on agricultural products (CCT, Chapters 1-24). This could be a step toward removing some of the discrimination between the poorer countries, that the present hierarchy of EC schemes has created.

In the EC's agricultural trade relationship with developing countries the GSP does not loom large, partially because, as stated earlier, 59 percent of the imports from developing countries already enter duty free. Some idea of the extent of the concession can be gleaned from relating the GSP utilization figure--1,675 million ECU in 1981, to the total value of imports from developing countries on which duties are levied, 6,636 million ECU in 1979 (one-third of the total); those are very roughly the concessions related to about a quarter of the total value of dutiable imports. The major constraints on improving the offers, namely protection for EC farmers, protection for EC food processors, and some protection for ACP farmers and food processors from competition from other countries in EC markets have not been analyzed in quantitative terms. The track record shows that the Community has tried to make progress with the agricultural content of the GSP, both in terms of redistributing benefits between developing countries and in increasing the overall level of benefits.

Cereal Substitutes

The EC imports large amounts of cereal substitutes and complements to them (for example, soybeans). This is a result of its policies of high cereal prices (and inappropriate price relations between cereals) and of low levels of protection on the substitutes and some of their complements. Imports of cereal substitutes such as cassava, citrus pulp, molasses, and maize gluten feed are apt to be viewed by the Commission and EC wheat producers in "cereal equivalent" terms. This perception, reinforced by the CAP principle of Community preference, sustains the view that the cereal substitutes are an import concession, and this provides a justification for export (with subsidies) of an equivalent amount of cereals. Claude Villain, the former EC Director-General for Agriculture, claimed in 1981 the EC was still a net "cereal equivalent" importer. Such views seem to be partially sustained by the United States, said Villain, because it would be more logical if cereal exporters who complained about EC cereal exports would urge the EC to stop importing cereal substitutes which made such cereal exports necessary. In practice, he said some exporters unreasonably complain of a lowering in EC

grain imports, and at the same time take advantage of the expanding EC market for cereal substitutes.

EC imports of cereal substitutes in 1981 were estimated at 18 million tons, of which 10.5 million tons, or approximately $945 million worth (at $90 a ton) came from developing countries. The main developing country shipments--6.5 million tons in 1981--are of cassava, with a f.o.b. value, at $90 a ton for pellets, of $585 million. If the Commission's "cereal equivalent" argument is taken at face value, the 10.5 million ton figure implies that cereal-substitute imports from developing countries possibly cost the EC budget $500 to $750 million.

The EC is endeavoring to limit both the cost to the EC budget and the erosion of cereal farmers' incomes, attributable to the imports of cereal substitutes. Estimates of the forgone quantity of home-grown cereals that would have been consumed in the absence of the cereal substitutes in the EC vary a great deal. Stohr has suggested that the use of cereals in compound feeds would be no more than 3-4 million tons higher. This was because compound feed production would have developed more slowly, and the substitutes would have been replaced not by cereals but by oilcakes (some of which come from developing countries). Also, he felt the additional cereals used would largely be imported feed grains.

While the extent of the developing countries' share of the additional burdens cereal substitutes impose on the EC budget is a matter for more research, the benefits to developing countries from the trading opportunities in cereal substitutes are already fairly clear. The benefits to Thailand, for example, from nongrain feed exports are substantial. In 1980, the export earnings from cassava, 90 percent of which went to the EC, were equivalent to 2.2 percent of GDP; they accounted for 21 percent of the agricultural exports, 12 percent of total exports, and earned $730 million. The regional impact on growth from income and employment is also very significant, as much of the production is in one region, the Northeast Region. The export restraint agreements the EC has recently negotiated with Thailand (quota set at 5 million tons for 1982 with a possible 500,000 tons extra), Indonesia (500,000 tons), and China, seem, at this stage, to limit further increases in imports. Shipments above these levels will pay more than the 6-percent ad valorem duty currently levied, and will compete with zero-rated corn gluten and citrus pulp, much of which comes from the United States.

Pricing

Commodity Pricing Issues. The EC has long stressed the importance of commodity-pricing issues. Its basic stance is that international commodity agreements and insurance mechanisms like its own STABEX and the multilateral schemes like the IMF Compensatory Financing Facility can be in the mutual interests of all participants in international markets, and should be used wherever feasible. There is perhaps, more so in the past, an ideological content in EC views; this has weakened somewhat and there is more pragmatism now. There are various examples of pragmatism on pricing issues. The EC did not join the International Sugar Agreement, though some coordinated stockholding with the members of the International Sugar Organization is now underway. The negotiations over the UNCTAD Common Fund showed that the EC, while sympathetic to international action on pricing issues, does not accept the thesis that markets should be rigged to transfer resources to developing countries. Nevertheless, there remains much skepticism and little confidence in unorganized international agricultural markets.

The Community believes that an international grains arrangement with pricing provisions is an essential prerequisite for an adequate standard of international food security. To what extent this is a posture rather than a substantive position is not very clear, but the evidence perhaps now supports the former view. The publicized reasons for the breakdown of the International Wheat Convention negotiations include divergencies between countries over stock levels. The EC understocks relative to its use of world markets. In the absence of an international wheat agreement, it has not developed and published a formal stock policy like the main cereal exporter, the United States. This issue is discussed further in a later section on food security.

Though hardly discussed in Community statements on commodity-pricing issues and barely analyzed in commission documents, including a recently requested report for the European Parliament, the Community's export subsidies are such that the Community and its CAP policies are daily influencing the prices developing countries receive for their exports and pay for their imports.

The main commodity markets affected are those for beef, dairy products, sugar, and wheat. These commodities accounted for 24 percent of developing countries' agricultural imports in 1979. CAP products account for 91 percent of EC agricultural exports to the developing countries. Products whose prices are influenced by EC export subsidies accounted for about a third of developing countries' agricultural exports to the world.

Basically, production and export subsidies are apt to damage the functioning of international markets. They contribute to sending the wrong price signals to producers and consumers. The impact on any one country depends upon the market situation, and the trade barriers and market shares of the main traders. In general, world-market prices are lower than they would have been if there were no export subsidies. When international prices are strong, probably the main effect of EC export subsides is on the volume sold, as exporters without export subsidies loose that share of the market taken by the EC. When international prices are weak, probably the main effect is upon prices, as the price level applying to all exporters is depressed further by the EC undercutting other exporter's prices.

Financial Issues and Development Assistance

In the early eighties the EC considered the two principal financial issues in the North-South dialogue to be: (a) financing deficits and growth in the nonoil developing countries, and (b) investing oil surpluses. Official international initiatives were deemed necessary in relation to support and supplement private-sector recycling by sustaining the flow of credit from banks, to encourage other forms of resource transfer using market mechanisms, and to improve official development assistance (ODA). In relation to the topical issue of developing country indebtedness, there is no use of credit measures in the CAP comparable to the role export credits play in U.S. agricultural trade policy.

The Community, in many of these wide ranging global financial issues, serves mainly as a forum for the evolution of a common position. The Community has few formal policies in the regulatory/bureaucratic sense in many of these fields. The EC's development assistance program, is small in financial terms, relative to that of the total for the individual development assistance programs of member countries. In 1980, EC disbursements at $1.5 billion were

equivalent to 12 percent of the total of EC members' official development assistance, including that channeled through multilateral organizations. EC aid is channeled through the European Development Fund; the general budget (food aid--$437 million, aid to non-ACP countries--$202 million, and to Mediterranean countries, which altogether totaled $668 million in 1980); and the European Investment Bank (project aid to non-EC countries mostly went to Mediterranean countries, and to a lesser extent ACP; totaling totaled $295 million in 1980). Geographically, Africa receives 67 percent of the aid, Asia 20 percent, and South America 7 percent.

The level of Community plus member-country aid compares very favorably with North American performance. In 1981, ODA from EC countries was more than double that of the United States. In per capita terms, ODA was for the EC, Canada, and the United States, respectively $50, $45, and $31 in 1980. A similar pattern occurs in aid to the agricultural sector, where commitments by EC countries in 1980, which totaled $1.6 billion, compared with $1 billion from the United States.

The CAP has had a perceptible influence on the EC development policy in at least four ways. It provides:

- Competition for budgetary allocations;
- Pressure for aid to certain countries because of CAP trade problems, such as, Thailand;
- Pressure not to provide project aid for products that would compete with EC production, such as, sugar; and
- Pressure for food-aid allocations, in preference to other forms of development assistance.

In the EC, the competitive process for funds between different policy areas is not quite the same as in a national administration. The multilateral arrangements for the EC budget are such that national annual parliamentary authorizations are largely not needed. The EC Council of Ministers has exercised its wide discretion to allocate most funds to the CAP (62 percent of expenditure), to the detriment of other policies, including development (4 percent of expenditures in 1982). This seems likely to continue.

Both from a donor and recipient perspective, there is a margin of substitutability between trade and aid. Bilateral trade imbalances, partially as a result of trade distortions, have often been made more politically tolerable by increasing aid levels. The EC used aid as a factor in the agreement with Thailand to limit exports of cassava to the EC. So the additional EC aid funds channeled to Thailand, one of the more successful developing countries, are either at the expense of other poorer developing countries, or the real value of total funds available for concessional development assistance has been reduced by such actions.

The quality of aid can also be influenced by pressures derived from the CAP to limit competitive crop production by aid recipients. While the attempts of the United States to limit World Bank loans for palm oil development--as such oils compete with U.S. soybean oil--are well known, there are similar pressures within the EC, namely to limit aid to sugar projects.

Food aid seems to have sufficient credibility among taxpayers in donor countries to make it one of the more acceptable forms for the transfer of resources to developing countries. Such transfers are, in general, declining

in real terms, so additional pressures from the CAP to increase food aid at the expense of less restricted forms of aid become more pertinent. A recent example is the case of Zimbabwean sugar. To meet the request for a sugar quota, the EC had to reconcile the conflicting desires, not to increase the global quota and not cut the existing quotas. As a result, Zimbabwe received a quota based on the unexhausted quotas of other ACP states and a promise that if this was insufficient, the sugar would be exported as food aid.

Food Aid

EC member countries, in view of their traditional role as food importers, have not, until recently, had the capacity to be major suppliers of food aid. Nor have they been very enthusiastic about food aid as a development policy technique. This lack of enthusiasm is partially reinforced by EC budgetary procedures and politics, since domestically produced food aid involves income redistributive effects between member countries. Nevertheless, the combined food aid programs of the member states and the EC are substantial, involving an expenditure of ECU 644 million in 1980.

The EC's main commitments on cereals for food aid were increased by 29 percent in 1981, when the new Food Aid Convention (FAC) replaced the earlier 1976 version. The Community provides 22 percent of the FAC commitment (1.65 million tons: 928,000 tons by EC institutions and 770,000 tons by member states). The EC is the major supplier of dairy products as food aid, though the amount has basically remained constant since 1976.

In terms of EC budgetary expenditure, the cost of food aid in millions of units of account (UA) in the period 1975-79 was successively UA 189, 438, 295, 518, and 644.

Food aid policy has been in the public limelight in the EC in recent years. Reports by the EC Court of Auditors revealed various administrative and political problems. 16/ For example, the auditors found that it took an average 377 days for cereals and 535 days for dairy products to arrive in Asia's ports once the program had been agreed. Three incompatible policies that limit the usefulness of EC food aid to recipients are:

- Annual programming, to ensure Council control over distribution;
- Distribution to a large number of countries, often in small quantities (26 countries got 22 percent of supplies); and
- Small, dispersed staff.

The CAP undoubtedly contributes to the availability of food aid, especially of wheat for food aid. So far, the Council of Ministers has not yet decided to explicitly increase the amount of wheat going to food aid. Though current world-market conditions are conducive to an increase in food aid shipments, such shipments remain in EC budgetary terms more expensive than shipments, using export subsidies. Nevertheless the EC has some room to maneuver in the North-South context on food aid, in view of public support and the physical availability of supplies.

16/ E. C. Court of Auditors, "Special Report on Community Food Aid," 30 October 1980, DOC. 1-662/80.

Food Security Issues

The EC views food security as a priority issue in the North-South dialogue. For food issues, there is a suitable international forum--the World Food Council, which is small (36 members), global (all countries participate in the selection process), has a broad mandate, and meets annually at the ministerial level. Other subject areas in the dialogue--such as energy--lack such a forum and so far, there is no institutional format for the "global" North-South dialogue.

In the EC view, the primary means to achieve food security is to increase food production, particularly in the poorer developing countries. Responsibilities for this lie with the developing countries themselves, to implement national food plans or strategies (price and credit policies, storage, transport, land tenure, development of cooperatives, and so on) to increase food production. To support these endeavors, the EC Council believes the international community, as the EC has done, should provide backing for the preparation and implementation of food strategies in individual countries. In addition, the Commission believes endeavors should be made to improve the volume and quality of aid to agriculture, improve agricultural research, and in particular, evolve production systems less dependent on imported energy.

Meanwhile, as long as countries are dependent on food imports, they can be helped, in the commission's view, by greater stability in international markets for cereals and other commodities; better storage/reserve systems appropriate to their needs; an EC export policy (longer term contracts and credits); and by greater access for agricultural products in industrialized (including EC) countries' markets. Improvements in the volume/quality of food aid are seen as a measure to particularly help the poorer countries.

Rather than wait for the outcome of the North-South Dialogue and partially in response to greater public concern and pressures from the European Parliament, the Commission made proposals "towards a plan of action to combat world hunger" in 1981 and "a special programme to combat Hungerhin the world" in June 1982, that basically consist of a series of development policy measures to improve the food situation, particularly in the poorer developing countries. The Council has responded mainly by increasing food aid for the least developed countries, some of which were channeled though the International Emergency Food Revenue (IEFR).

So far the Commission has not tackled the question of what contribution a reform of the Common Agricultural Policy could make to the world food system by, in particular, seeking better complementarity with developing countries' agriculture. The CAP is one of the main reasons why the Commission, in its recent initiatives, has used only development policy options. The main, shorter term international agricultural policy option to deliver improved food security for all countries has long been considered by the Council and the Commission to be an international grains arrangement. However, this involves an agreement among others with the United States, an agreement that has thus far proved elusive.

The commission's recourse, to development policy options only to improve developing countries' food security (either bilaterally or multilaterally), is influenced by the CAP. Presumably, the commission has recognized that its main CAP-related proposals are not currently feasible. An international

grains arrangement to stabilize the market is seen as not feasible due to lack of U.S. support and the EC-U.S. conflicts over wheat export subsidies. Similarly, EC member states are not supportive of more agricultural trade liberalization to provide developing countries with more export earnings to pay for food import.

Some of the enthusiasm for development policy options may be traced to some evidence that stabilization of the international cereals' market will solve only some of the many food security problems of the developing countries. In 1980, only 6 percent of total cereal consumption in the poor countries (those with per capita incomes below $699 in 1978) was imported; whereas, the middle-income countries imported about 23 percent of their cereal consumption. However, of the 76 countries in the low-income group, 38 imported more than 21 percent of their consumption. So the functioning of the international cereals market, which is the main international relations issue in the food security aspects of the dialogue, seems to be important for about half the poor countries; though in population terms, they account for only 9 percent of the population of this group of developing countries.

By pooling risks--across regions and time--the international cereals market can provide the cheapest insurance of cereal availability. The EC, along with other major users of the market--who are not poor countries--collectively determine market size and structure and so determine the food security capability of the international cereals market. Flexibility in the cereal-trading system stems from adjusting stocks, consumption, and production levels.

Stock adjustment. While all countries need stock policies for national food security purposes, it is primarily the major traders who have reserve or buffer-stock responsibilities because of the size of their international market shares and their interests in expanding the cereal-trading system and bringing greater stability to farmers' incomes and consumer prices. The major traders do not usually distinguish between stocks used in the management of their domestic markets and stocks used in relation to trade. In the first instance, it is stocks used in relation to trade that are of concern to the international community.

Clearly the CAP has improved the capacity of the EC to use reserves in an internationally responsible manner. The physical supplies are there, though the storage capacity may not be. Yet the consensus of academic research and the opinion of other major stock holders is that the EC understocks. The CAP provides the option of understocking because of the use of explicit export subsidies, which have not been extensively used by the other major exporters since 1972. The EC has a financial incentive to use such subsidies as it is cheaper from the EC budgetary point of view than to hold in stock a higher proportion of the current surplus. The CAP's administrative arrangements, notably the public financing of intervention stocks--as in the United States--are conducive to a greater degree of international reserve coordination. In contrast, in Australia where growers finance the stocks, stock levels tend to be low relative to instability in production and trade.

The usual criticism of EC stocking policies--that the stocks are too low and are procyclical so that the EC destabilizes the international market--needs clarification. This is not really a criticism of the CAP, per se, but merely a criticism of Commission budgetary practice. Where the CAP really constrains the EC position on use of stocks for market stabilization is in the field of consumption adjustment.

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Consumption adjustment. Flexibility in the use of cereals for animal feeding is an important element of world food security. Of the 40 percent of the world's cereals used for animal feed, over 80 percent is consumed in OECD and CMEA countries. The quantities involved in consumption adjustments in recent years have been very large relative to stock and trade levels. In 1974, OECD feed use fell by about 8 percent, or 23 million tons, as a result of developments leading to higher prices. This quantity was equivalent to 17 percent of world stocks, 15 percent of world trade, and 48 percent of developing country imports in 1974. The EC does not contribute to such flexibility. In that year 85 percent of the fall in OECD feed consumption occurred in the United States, which accounts for just half of the feed consumption in OECD countries. This inadequate sharing of the burden of international adjustment reflects the domestic price-stabilization objectives and policy instruments of the CAP. These objectives and instruments fall within the purview of national sovereignty, but the international effects are considerable.

Production adjustment.--Under the CAP, most domestic producers are not responsive to world-market conditions, particularly price signals. This domestic policy choice does not absolve the EC from its international responsibility to ensure that its policies are at least neutral toward, if not supportive of, the international trading system. Again, the unwillingness to allow domestic prices to move with international prices lends support to the notion that the EC should incur temporary stockholding responsibilities, corresponding to the amount that the international price signals would have taken out of production.

Quantitative research is needed to estimate stockholding levels required to offset effects of the EC's limited use of consumption and production adjustment. While such work is essential for measurement of the international impact of EC cereal policy, this impact should not be over estimated. U.S. cereal production at 334 million tons is a much more significant international food security factor than EC production at 130 million tons.

Conclusion

The priority that the EC gives to the North-South Dialogue and the priorities within it are changing. Currently, the slowdown in the international economy and related financial issues (IMF quotas, debt levels) are the EC's major international preoccupation. In terms of international food security, the need for more cereal stocks, if not stocking policies, has disappeared. So far, the EC's general policy performance towards the developing countries compares very favorably with the main practical standard available--U.S. performance. More detailed analysis at the developing country level, taking account of aid, trade, and export earnings foregone due to protectionism (CAP, textiles or otherwise) may well confirm this. The negative impact of the CAP on developing countries is being tackled, but it is not on the same scale as that of OPEC or of U.S. monetary policy. 17/

17/ Bergsten, C. F., "The Costs of Reaganomics," in Foreign Policy, Fall 1981, suggests each additional percentage change in U.S. interest rates adds perhaps $4 billion to developing country deficits, and that such a change has a bigger impact than a 1 percent change in oil prices.